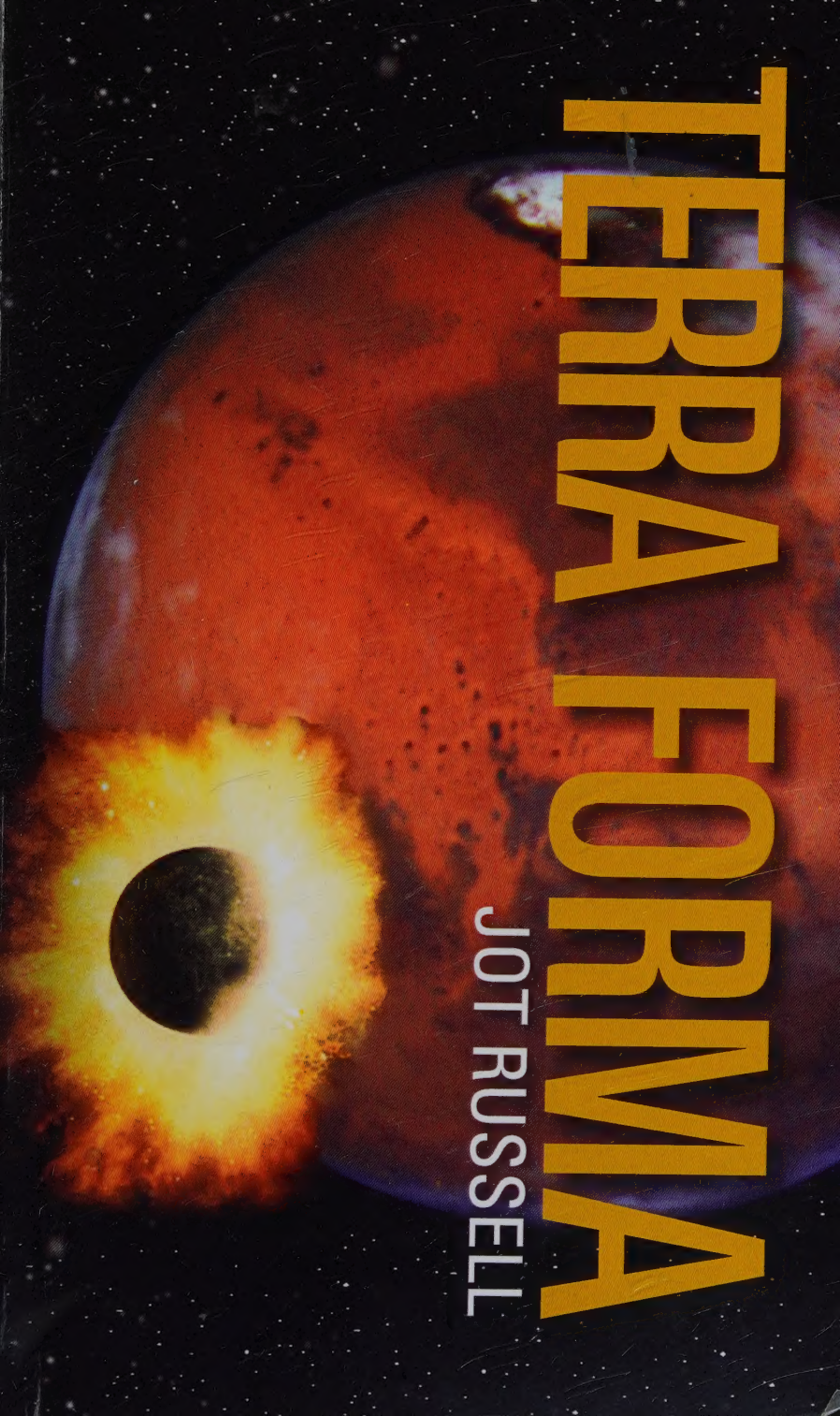



# TERRA FORMA

JOT RUSSELL



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*To my Mom*



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# 1. FIRST IMPACT

Humanity celebrated in 2047 as the first icy rock impacted Mars. The gathered crowd gazed up at the fiery plume that erupted in three dimensions over Times Square. Cheers overpowered the false audio that was produced to mimic the destructive force being wielded to achieve the reverse. As the universe was created from a single explosive event, one man sought to revive a once living planet through the force of a hundred thousand explosions.

James Kennedy proudly watched the spectacle from the Mayor's platform. The President took in her amazement of the experience and turned to congratulate him on his achievement. "This could very well be the best Fourth of July, ever."

James smiled and said "No Ma'am. That could only ever be in 1776."

"Ah yes. Quite true! But this is certainly the best of my lifetime."

James agreed, "Mine too Mrs. President. Mine too."

From behind them came, "Mr. Kennedy, can you tell the world what you are thinking or feeling?" With his hand still shaking that of the President, he used his grasp to suggest they both turn to face the media. After completing the

maneuver, he released and looked over at the only press crew given access to the platform, before looking back at the President as if to direct the question towards her.

“Thoughts?” He turned back to face the reporter for the final answer to the query. “No, no thoughts. Just feelings. Overwhelming feelings. I can only hope that the joy I feel is shared with all the people of the world. If everyone felt just a fraction of the happiness that is within me, there would be no despair, no hatred, nor fear.”

A young man rounded the corner and proceeded across 47<sup>th</sup>. The package in his hand was small and looked like any other that might have been delivered by a courier. The familiar doorman gave him a nod as he passed through the rotating doors. Once within, he caught the lift, using the time to settle his nerves and clear his mind.

There within the silent elevator, a contact formed that pulled him from his meditation. The small device rounded his head like a pair of sunglasses worn in reverse. The clear image that it projected into his mind was that of the woman he longed to see from his home in Pakistan. However, unprepared for the intrusion into his focus, he hesitated against completing the connection. After a couple deep breaths, he worked down his guard and made the mental gesture.

“Why didn’t you pick up right away?” She asked, receiving only his blank stare in return. Her own expression changed to one of surprise over the confines of his surround. “Where are you? I thought you would be out watching the impact?”

“Why would I want to watch the fruitless efforts of that foolish American?”

"Foolish? You really think that?" Her need for the question drained the excitement she had just previously projected.

"Yes, and you will as well."

"But I don't want to! He's trying to create life. Life from two bodies, like a new child from a man and a woman."

"You mean from two dead bodies. Believe me, nothing will come of this!" He demanded, growing frustrated with the argument.

"I'm pregnant," she said, wishing that the occasion provided the happy moment to complement her news.

"You're pregnant?" he stated in a confused manner.

"Yes. You're going to have a son," she said, with tears forming in response to his less than emotional reaction.

"I'm sorry, I can't think right now. There is something I have to do. Something I have been preparing for a long time. It's the reason why I am here."

"I'm not asking you to think. I'm asking you to feel. I'm sorry, I thought you wanted this. I guess I was wrong."

"I do..." he stated before being cut off. Without time to reestablish the connection, he shook it off and merely echoed her news: "A son?"

"And how about you, Mrs. President? What are you feeling?"

She kept her gaze on the reporter's eyes, ignoring the twin cameras mounted on the opposing shoulders of his associate a few meters away. "I don't think I could articulate as well as James. The experience is overwhelming and



makes me want to share it with others. Of course, this is just the first of many impacts needed to initiate the terraformation of Mars, but it is quite a milestone.”

Turning her head towards the camera man, she added, “I feel what James has started is an achievement of the world and everyone who helped in some small way can take credit and pride in this accomplishment.”

The reporter asked her, “You deserve some of that credit, don’t you?”

“The United States, under my initiative, did help James to get the ball rolling. But remember, the federal government provided one flat grant to split amongst the supporting states. It’s those states and other countries that made the real investment into the project.”

“Even though most say it would have been cheaper to make it a federal project?” he asked, seeding the challenge in his query.

“It certainly might have been – or it could have cost a lot more. You see, part of me looked into the eyes of an honest and capable man, truly wanting to believe the project was possible and could be built on budget, while the other part knows all too well how military projects start off with one price tag, only to wind up costing ten times more.”

“So you saw this as a military project?” asked the reporter, with James looking on with a very concerned expression.

“I categorized it under that type of spending, yes. Pretty close to the truth, I’d say, given that the first astronauts were Navy and Air-Force pilots, where many of the asteroid tug crews today are military officers.” She caught

the look on James' face and added, "But this is not a military effort. If anything, this is counter-military."

"Counter-military? How do you mean?" asked the reporter.

"Before the turn of the century, people talked about a third world war. A war so complete that any war that followed would be waged with sticks and stones. We instead have one that has lasted half a century to battle those who hide amongst the masses. A war that never ends and slowly takes away our humanity. And even after all the tears cried for the children and people of Berlin, we and our allies are still hated as they continue to plot against us. They use our vacancy of a region as a training ground and our occupation as a means towards recruitment. However, by sharing a youthful idea that binds our purpose and allows us to work together on a common goal, we provide a road to the future that cannot be paved with tanks."

"I see. Does that mean you backed the mission for international relations?"

"That was certainly one reason," nodded the President.

"But did you believe the project was possible?"

The President finished, "Let's just say, James made me a believer."

"Of course, there are some who are still not believers. Mr. Kennedy, critics remain who say this impact will prove the method will not work."

James was happy to respond to the increasingly dwindling pool of critical scientists and conspiracy theorists. He explained, "Within a few hours, the slight decline of Mars' orbit will be confirmed to be in-line with our predictions. It really is a simple matter according to the laws of physics.



If two objects collide and join into a single object, all the momentum of the separate objects is added together into the combined object. And since our method allows us to swing these asteroids into a reverse orbit, aside from a small amount of heat, most of their energy can be put into slowing Mars down. With less energy, Mars is unable to maintain its distance, causing it to fall slightly in towards the Sun and a lesser orbit. Of course, moving Mars closer is the easy part. It'll take the joining of worlds to initiate a true terraformation. The measurements already confirmed that world drawing closer."

"What will that impact look like?"

James smiled and peeked back to see the small after effects of the rock, nicknamed Manhattan, hitting Mars. "Well, if this is like a fire cracker, the other will be like a nuclear detonation. Let's just say it'll be nothing short of spectacular." James looked over at his wife, transfixed on the scene. "Just one more question, please. I would like to enjoy this moment a little more with my family."

The reporter nodded and asked, "In that case, would you like to introduce them to the world?"

"Yes, of course. Silly me." James walked around the President and took hold of his wife's hand. She turned around with a gentle smile, but jumped back a little and let out a nervous laugh when she saw the cameras facing her. The surprised woman looked back around and tapped the shoulder of her daughter. She, in turn, got the attention of the other kids as James began, "This is my beautiful wife Mora, my sons Patrick and Jason, my wife's daughter Dineen and our son Cody. Cody should be very comfortable here, because his nickname within the family is the Mayor."

"Oh, why is that?"

James opened his mouth to speak, but the eight-year-old boy beat him to it. "I just like to play and it's not much fun playing unless you have a friend around. So, I make a lot of friends," he said, nodding.

The reporter turned to the true Mayor, who was talking to the President. "You hear that Mayor Griffin? Looks like you have someone after your job."

The Mayor laughed. "Is that so young man? I'll tell you what. I'll give you my job if she gives me hers," he said, pointing towards the President.

Far up above, the partly open window faced away, with no line-of-sight of the platform. However, an adjacent building provided just enough deflection for the thrown object to bounce off and complete the eight second drop to its mark below. The same number of seconds needed for the grenade's fuse to ignite the weapon. The explosion sent shrapnel in every direction; through windows, crowd and the heart of young Cody. The shock-wave knocked everyone across the platform and three to the street below. James Kennedy fell the ten meters onto a few in the crowd who were ducking for cover. The impact broke his hip, causing him to let out a painful scream. The sounds were drowned out by the panic and commotion that filled the square. He recovered his breath and worked to compose himself. The scene around could only be described as pure mayhem. His scan paused and settled on the red-lined, broken face of the President. Only the agonizing screams of his wife still up on the platform broke the hypnotizing power of the sight. The sound felt like a hand, slowly squeezing around his soul.

## 2. EULOGY

Twenty-one shots fired as as the President and media-proclaimed Junior Mayor of New York, Cody Kennedy, were laid to rest. The image was fed through the web and viewed around the world in greater numbers than previously recorded. It is said that the tears of a billion souls are enough to create an ocean on a distant world. James wished those tears could be used instead to wash away endless years of wars brought on by simple differences of race and creed.

Hours before, James echoed the words at his son's eulogy, "It's not much fun unless you have a friend around, so he made a lot of friends. Let the world live with such simplicity of truth. Make friends and share the life provided to you. Enjoy yourself by finding the good and fun things in others. Yes, it is easy to find differences, but embrace them. These differences are not a path for anger, but a way that shows we are all special. We are not robots from an assembly line; we are individuals looking to have a meaningful and fruitful life on the world we share. I forgive the people who have done this, because the dark path that guided them existed long before Cody or any of

us. It is a chain that self replicates. But as with any chain, it is only as strong as its weakest link. If you disagree with Cody's death, then break free from that chain if there are those who are influencing you to build it. Only together, can we make a world as Cody would have. One in which anywhere you go, you have a friend. Cody and I are your friends. Please be ours." James completed what he had to say, feeling the tears stream down his face like a river to the sea. The comfort of others around him with the same response provided little to cure the pain in his heart, but it was appreciated.

James moved slowly, relying on a cane and his external carbon prosthetic to return to the pew and console his wife. Her expression was not one of acceptance, but rejection. Mora glared at him. "You forgive them? How dare you give them peace for murdering our son!"

James didn't realize until this moment that his heart could sink any lower, but the pain and palpitation clearly defined this for him. "I'm sorry, but I want his life to mean something more than anger and revenge. Cody was pure. Free of sin and filled with goodness. Thousands of children are killed every year in this religious and ethnic violence. Cody put a face on this; a face that no one can criticize. A pure soul who I believe can help put an end to this violence. Please let me make his life mean something, so we can work to save the countless others."

As a mother, Mora's feelings were biased towards the care of her own. The anger she felt had no channel towards release, but her love and belief in her husband brought his words into the process of developing its own

chemical response. "You believe that? That Cody could have that kind of effect on the world?"

James felt his hope returning. "Yes, I do."

To Mora, James was the smartest man she had ever known. When things seemed hopeless, he saw a path through one mess or another. She pushed her hatred aside and embraced an image in her memory of her son laughing and playing. The release of her struggle brought about an explosion of emotion, causing her to break down onto her husband's shoulder. James groaned from the pain, moving his cane arm down and against the back of the pew. He looked around within the otherwise silent church. Feeling the eyes of the congregation and world, he gently guided Mora and himself down to their seat. It took a minute for the priest to compose himself, with the tears flowing from his own eyes, before continuing the service.

In the months that followed, Cody's life and the renewed hope of the mission sent a wave of support around the world. From the Americas, to Europe, Australia and Asia, factories were created and machines built to serve a common goal. The plant just outside Karachi looked like any other. The shades of skin and clothes mattered not to the design and technique. People sought the jobs with a passion, eager to work directly on vessels that displayed their country's name and were manned by their citizens.

Without the interference of being solely directed by an American, each country could take some ownership in the project. This had an impact beyond the task, technology and employment for the people; it knocked down invisible walls that divided the world. The chain was breaking.



### 3. INSTRUMENT

Forged from the fires of an Athens in ruins, rose an instrument of death as few had seen before. The civil unrest of the century's teens erased the heritage of his family and destroyed the place that lay his roots. Alone and confused, his was an easy soul to offer the harshest of poisons.

As with other Pakistanis, Kulari found it easy to enter this European city and withdraw the child from the clutches of his dead father. "Come with me and I will teach you how to strike back at those who have taken him from you. I will love you as a son and guide the strength that will grow within you. We will trick the demons with their own greed and destroy their evil city as they have destroyed yours. By the instrument of your hands, Berlin will burn! I will call you Torakos."

Thirty years aged from that day, he returned to the roots and heritage of his adopted family. The dark man, known now only as Torakos, had eyes as deep brown as the black within their center. The scar on his chin ran down the better part of the left side of his neck. He wore it like a

badge, displaying the remnants of the injury obtained during the mission he was fooled to believe. And believe he did. The murder of the faceless millions bore no remorse from the man who was engineered only to hate.

Ten years healed, the scar easily stretched as he looked out the window, down to the river below. His gaze followed the line through the mountainous landscape. The vehicle flowed through the air, gaining lift and control from the proprietary shape of its surface. Its engines provided far more thrust than what was needed to keep it aloft, but that didn't stop the man from pushing them to their limits on several occasions.

He bore hard around the last Earth born curve, feeling the welcoming effects of the increased force. As he completed the turn, the scene opened wide to reveal the grounds of the holy mount a hundred kilometers west of Peshawar, Pakistan. The castle was his home and the mosque his source of power and wealth. The sight brought him more pleasure than landing the Italian made sports craft in the car port at the rear of the complex. Torakos left the vehicle and spoke the command, "Secure!" without looking back to see the lights flash their confirmation.

The tall hallway was arched and decorated with appointments of Arabian and Persian luxuries throughout. He gave small nods to the people who bowed to his presence. The respect produced a surge of power through his veins and the completed deed built his head up to the false level of a general.

He mounted the stair that led to the highest tower. Just as in his younger days, he ran up the five levels, skipping

over every other step. The arrogant belief of his strength with the pleasant feel of his breath and blood painted his self image as an immortal. Reaching the landing, he stopped to control his breathing while telling himself the pause was to gaze at the view. He breathed in slowly through his nose until his lungs could hold no more, then reversed the flow from his mouth in an even slower manner. As he controlled his pulmonary rate, he willed his heart to beat less and believed it to be following his direct command.

The knock was followed with the directive to enter. He did so proudly.

“Congratulations, my lord,” bowed Torakos, speaking the words in Arabic.

“Congratulations? I am not so sure,” Kulari said. “Our man turned himself in this morning. That American may become a larger problem than even his president was.”

“The channels were secure, my lord. They will not be able to lead this back to you. The mission was a success.”

“Have you seen the communiqués? This ‘Be my friend!’ campaign is like a virus across the flock.” He slid the message toward Torakos, who looked at the words under a picture of Cody. Each message contained a link for anyone to anonymously gather or provide information towards its goal.

“I have seen it, my lord. It is a phase that will die with their evil ideals.”

“My son, there is something you must learn.”

“What is that master?”

“Never underestimate your enemy.”

“Wise words, my lord. I shall heed them.”

“There is something else for you to learn.”

“Yes, my lord?”

Kulari waved his hand over the wall and it came alive. The vessel design appeared before them in full animated likeness.

“Do you wish me to find a weakness in the design or organize an attack against the factory in Karachi?”

“Neither. His weapon is the project. We must uncover the evil it represents. Using his instrument, we will wean away from their western intoxication of our society by laying waste to their own. I will guide you and you will guide the power of Allah.”

“As you wish, my lord.”

## 4. DRYDEN

Virginia-7 sent a unit down to “Dryden”, previously known as ABO-3726. Competition bred the tradition of naming each Asteroid Belt Object smashed into Mars after a city from the supporting state or country. These impacts on Mars marked locations of would be settlements and cities for those who sponsored the terraformation. Even though Mars would remain dry and dead for some years to come, an island of land surrounded by dry river beds was already given the name, New Manhattan.

Evan McKinley had his sights set on a small mountain near the dry remains of what had been the Martian coastline. With the help of the on-board tracking system and guidance from Ceres Station, he could crash it right smack on top. That is, as long as they made the rotational window.

Thomas Breslin flew the landing shuttle from the large, disk-shaped tug vessel, down towards the surface of the asteroid.

“That looks like a good spot,” pointed his larger friend, Gerard Sebastian.



Tom looked over to see a small valley between two elevated regions that would help secure the tow cord around the two-kilometer wide, floating rock.

Gerard resumed the prior conversation. "Really though; even after two and a half years out here, you're happy flying this pod, instead of commanding a tug?"

"What would you choose dude, a cargo truck or sports craft?" asked Tom.

"I guess can see your point, but hey, this is no Corvette."

"Oh yeah?" Tom said, touching the console to display the three-dimensional outline of their flight path.

"What are you going to do?" asked Gerard, nervously.

"How would you like me to tie you a virtual bowline?"

"Oh shit, no!"

Tom grabbed hold of the stationary flight bars and used the direct interface to think his way through each maneuver. They were both suctioned to their seats, but Gerard held on for his life as the small vessel tipped sideways and looped back in a tight, six-g circle. Tom straightened her back out only a moment before coming about in a larger and less violent loop. The hundred and eighty degree turn brought them back in the direction of the invisible circle that Tom had drawn. Gerard attempted a quick breath as he watched them fly through the 'rabbit hole' laid out in front of them. Tom twisted the pod and turned her towards the 'tree' to circle around and fly back out of the 'rabbit hole'.

With his slow and straight flight path resumed towards the asteroid, Tom circled the image of the knot with his

finger, gestured a grab and tossed it in Gerard's direction. The image stopped in front of him, but continued to rotate from the twist Tom had broadcast from his wrist.

Gerard spoke (looking a little paler than the black skin he normally bore), "Yes, very nice. But I'm sure you used up half our hydrogen in the process. Besides, if I had the choice, I'd still rather be telling people what to do instead of the other way around."

"So why don't you? Your dad was the first man to walk on Mars," asked Tom.

"You forgetting he died there before I was born? Besides, with my grades, I was lucky to even make it out here."

Tom nodded in sympathy. "Sorry dude. But whatever the case, when are we even told what to do? We're here because we want to do the work and no one is going to tell us how."

Evan's face appeared over the console with his words sounding as if they came directly from his projected image, "Hey, stop goofing around down there and let's get this rock in tow. We only have half a point to make this window."

"Acknowledged Seven," Tom confirmed with Gerard busting out laughing in the background.

Gerard opened the interior door to the airlock, donned his helmet pack and connected himself to the retractable tether. He touched the icon, waiting the few seconds for the doors to cycle and present him to this tiny, foreign world. It didn't feel foreign or unique to Gerard, but it still gave him a smile to know he was the first to step foot here. 'I am Armstrong and my father thirty-three times over,' he thought to himself.

Gerard made very small hops on the world that was barely large enough to hold the rocks to its dusty surface. The spike was set into the loose ground to provide a weak anchor point for the loop around. The large tow cord hung down from the hovering tug. Gerard grabbed the loop and kneeled down for its attachment.

“Connection made, Seven. See you on the flip side.”

“Copy that Gerard. Proceeding around,” replied Evan.

Gerard used the time to comb through the surface rocks.

“Hey dude, you lose something?” Tom radioed, jokingly.

“Yeah man, my virginity.”

“Really? Who’s the lucky guy?”

“Very funny, jackass.”

“Seriously, what are you looking for out there?”

“Anything shiny, man. Chicks love tokens of affection and the nearest mall is a hundred million kilometers away.”

“You mean a couple hundred. Dude, you can print out pretty much anything you can search for or sketch up on the computer.”

“Yeah, any object colored carbon-black or painted. I’m talking shiny and sparkling.”

“Ha ha, digging for gold. Good luck with that.” Tom laughed.

“Yo man, don’t you remember last year? I showed you that rock I found on ‘Norfolk’. I didn’t think much of

it, but Suzy from Michigan-4 sure did. I don't even know what it contained, but she got very excited when I gave it to her."

"Really? How excited?"

"Like a cat in heat."

"Meow!"

"Who knows what we could find out here. It's not like we took the job because the pay is good."

"You got that right! Okay, but if you find anything, you gotta hook me up. We can't both be digging around out there."

"Hey man, whatever I find, if anything, I'll share it with the crew. Lord knows Evan needs all the help he can get."

"So, how's it going?"

"You know what they say: 'A bad day of fishing is better than a good day at work.'"

"Roger that."

Gerard continued picking up rocks and smashing them together. The loosely packed black stones crumbled under the impacts, revealing little more than additional dark matter. As expected, the tug and tow cord appeared over the horizon. Gerard pulled the cord closer with one hand while sifting through the remains of a rock in his other. He dropped the dust and hooked the cord to the clamp before heading back to the pod. With his attention directed towards the surface, he made it halfway over before the tether stretched tight and held him back towards where it was looped under the tow cord. "Freaking leash.

What a useless piece of crap!" he cursed and unhooked it from his belt before triggering the rewind.

He let the carabiner drop and watched it drag back around to catch on the tow cord. "Oh shit! Tom, heads up!"

Tom sat back down and was preparing for their departure when he heard the transmission. Only a moment passed before the pod suddenly yanked sideways, sliding across the loose, bumpy surface of the asteroid. He caught hold of the console to brace himself and screamed over the radio, "Hey, what the heck is going on out there?"

In a panic, Gerard ran in place with his feet quickly sliding across the ground, offering little change in his position. He paused and pushed both feet more down than backwards to start his movement in the direction of the mishap. He headed up and over towards the loop, but his flight failed to follow the arch needed to bring him back down towards the rock. Adrenalin had gotten the better of him, allowing his chemically induced jump to give him just enough push for escape velocity. "Oh shit! Tom, I'm flying away."

"Away? Away from the asteroid?"

"Yeah man. The tether looped around the tow cord, so I unhooked to let it find its way back."

"Tow cord? Is that what I'm hooked on to?"

"You got it. I tried to jump over and unhook you, but I jumped a little too hard."

"God damn Gerard, you think you're Superman or something?"



“Well, if I had my pick, I’d say Batman, but alright. Oh shit, watch out!” Gerard warned, seeing a large rocky mound in Tom’s path below him.

Tom hooked his legs and feet around the base of the chair to keep his seat while he triggered the engines. The thrust combine with the ramped shape of the mound, launched the pod up much faster than he expected. The motion bumped Tom off his seat and into the ceiling, before coming to rest in the back of the pod near the airlock.

The tether continued to pull the pod in, causing it to swing around and crash into Gerard.

Tom rubbed his head where it hurt and felt the moisture on his hand. With his other hand, he reached over and touched the icon to seal the airlock. The outer door slid closed, jamming the tether and leaving a gap open to space. The lack of a seal prevented the airlock from pressurizing, locking Tom in the pod and leaving Gerard’s still form to float away in space.

Tom made it back to his seat, triggering the suction lock before controlling the pod to a soft landing. “Gerard, the tether has got me locked out of the airlock. I gotta call Seven for help.” He waited a couple seconds for a response, but received none. “Gerard, you okay?”

Tom hit the link to open a channel, “Seven, we have a problem.”

“Problem? What you talking about Tom?” Evan radioed back.

“Gerard is loose and floating away. He got his tether tangled up with the tow cord and somehow got bounced

off into space when he tried to free it. I'm stuck here until someone can free up that tether, so you guys gotta go after him."

"Oh crap, where is he?" Evan asked, looking over to his co-pilot.

"I got him; he's floating away pretty fast," Peter said, using his sensors.

"How the hell did he get off his tether?" Evan radioed back over to Tom.

"We'll figure that out later, just get him dude!" panicked Tom.

Evan hit the engines and looked over at the sensors. "Damn, he's already a kilometer away."

"You better get him quick before we run out of tow cord," Peter pointed out.

"I'm not sure we're going to make it. Get a pack on. I'm going to drop you off with Tom. Unhook the pod from the cord so I can release it from the rock."

"Can't we at least try to get him first?"

"If we do and run out of cord, he'll run out of air before we can unhook from the asteroid and get back to him."

"Yeah, I guess you're right. Okay, I'm heading up."

Peter grabbed a helmet pack and climbed the ladder to the central part of the spinning vessel. From within the pod bay, he hooked himself to a tether, donned the pack and hit the access icon to the bay door. The three interior ball doors swiveled closed and air was bled from the bay

until Peter could feel the pressure shifts from within his suit. Once a vacuum was reached, the exterior door opened and Peter looked out to see the asteroid approaching below. It took Evan a few minutes to bring the tug down to just a few meters above the helpless pod. He reversed the engines, pushing dust and rocks in every direction.

Peter pulled back from the opening to cover from an onslaught of projectiles that ricocheted around and into him within the pod bay.

“Sorry Peter, came in too fast. You okay down there?” Evan radioed to his pack.

“Yeah, I’m okay. I hope Gerard is so he can sweep up this mess when we get him.”

“Roger that. Okay, you’re clear now. The engines have been reduced to maintain our position.”

“Copy. I’m heading out.”

Peter used his arms to pull himself out of the large hatch and down to the ribbon below. He grabbed hold and inverted himself upright with the asteroid before making his way to the carabiner. He easily unhooked the device and applied it to his belt before releasing the other biner that tied him to the tug. “Tom, open the door. I’m coming in.”

“Got ya. Come on in.”

“Evan you’re clear to release the clamp.”

“Roger that. I’m on my way.”

The encoded message reached the clamp, commanding it to release the loop and the connection to the spike

that remained anchored into the asteroid. Evan tipped the tug to direct the exhaust away from the pod that remained on the surface. He kicked the engines to half without waiting for the reel to complete its rewind of the ribbon from the asteroid.

Gerard was about ten kilometers away, beyond the reach of the tug if it had remained tied to the rock. The sound of his vibrate alert brought him around, wishing instead he could have slept through the pounding in his head. He took a look at his gauge to see he had only a quarter-tank left. With no visible sign of pursuit, he decided against wasting the breath on a communication. Instead, he activated the distress beacon, closed his eyes and focused on slow, shallow breaths.

“Gerard, this is Seven. Are you okay? I’m coming up on your position.”

Gerard opened his eyes and smiled to see the approaching tug. He put out his thumb and replied, “I’ve been better. Mind if I catch a ride?”

Evan half smiled and exhaled in relief from the gesture. “Yeah, sure; as long as you promise to keep your tether on.”

“I don’t know man. This never would have happened if I left the freaking leash in the pod.”

“You mean it never would have happened if you left it on.”

“Yeah, I guess.”

Evan flew the tug past and came-about to direct Gerard's path into the pod bay.

Gerard tucked his hands down to grab his legs. The maneuver flipped him over to land feet first into the waiting port. He jumped back from the far wall towards the glass console at the side of the exterior door. He hit the icon and waited for the room to pressurize. Gerard took one last look at the gauge, relieved to be back home with only a third of his oxygen reserves left. With his helmet removed, he took a deep breath through his mouth. He coughed out dust and decided to resume the controlled breathing through his nose he had been using to limit his air usage.

With a light jump, Gerard flew over to the supply cabinet and pulled out a portable vacuum. As he set to cleaning the air and surfaces, he caught a glimpse of something. There, across the room and through his squinted eyes, he saw a sparkle within the mess. He traversed the distance and picked up a brilliantly clear and irregularly shaped rock about the size of a marble. "God, is that what I think it is?"

By the time Gerard finished up and climbed down an access tube to the crew torus below, Evan had the tug hovering over the asteroid, yet again. Whistling his way down and over, Gerard came up behind Evan and gave him a pat on the back. "Hey man, thanks for saving my ass."

"No problem. You want to grab a seat? I could use a co-pilot."

"Sure man, but first I want to shake your hand," Gerard said, putting out his hand.

Evan gave him a strange look, but complied with the request. Between their hands, Evan felt something. Gerard twisted his hand sideways to have the object fall into the palm of the other. Evan brought it up between his fingers, close to his eye. "That looks like a diamond. Where did you find it?" he asked, handing it back.

Gerard refused to receive it. "I didn't find it; you did. Along with a bunch of worthless rocks and dust up in the port bay. It's yours man."

"You're kidding me, right?"

"No man, it's yours."

"Wow! Thanks man."

"Don't mention it. How about we get this rock under-way?" Gerard said smiling.

Evan said, "Yeah," and pointed to console next to him.

Gerard took the seat and brought up the co-pilot program.

With the loop sewn back around the rock, Tom radioed up to the tug, "Seven, this is Pod-A. The connection is complete. Dryden is yours."

"Acknowledged Pod-A. We're pulling in the slack."

While the asteroid continued to rotate, the tug rolled in the ribbon until the line was taut. The rotation continued, pulling some of the ribbon back off of the roll. Gradually, the force against the rotation slowed it until the rock trailed motionless behind the tug.



Tom maneuvered the shuttle to the far, bottom side of the tug. The magnetic shield was disengaged while the pod approached the main central access port. The tug bay extended an arm that spun with the rotation of the tug. Slowly, the arm started to spin on a track within the bay, until it appeared stationary with the waiting pod. Magnetic clamps grabbed the top of the shuttle and engaged its rotation to match that of the tug, before bringing it into the empty port bay. The arm disconnected and retracted back to the “ceiling”. The port sealed and the small, circular bay pressurized.

From within this central room on a disc-shaped vessel, Tom and Peter felt almost no gravity. As they climbed down one of three of radial tubes, their weight increased and the ship automatically redistributed water to maintain equilibrium. Twenty-five years before, the crew of the Mars Mission had learned the hard way that a small shift in the mass on a rotating vessel did not agree with their stomachs.

With the docking procedure complete, the shield was reactivated. The central reactor provided power for this, the three primary ion drives and the rest of the systems on the ship. Water and waste were fed into the reactor with the remaining ionized matter ejected out of the engines at one-third light-speed. The original ion engine that NASA tested had a thrust equal to about the force of a piece of paper on your hand. The technology had improved considerably since then. Combined, the tug’s engines put out the force near the weight of the vessel itself. A drop in the bucket against the mass of a city-sized rock, but in space,

that small constant nudge made all the difference in the world.

The tow ribbon was mounted within a rotating cylinder at the top-center section of the vessel. Using magnetic bearings, the ribbon mount stayed stationary with the asteroid while the ship continued to spin. The tug throttled up to full and slowly pulled on the rock in reverse (no matter to the engines, that could provide the same thrust in either direction).

The carbon nanotube ribbon was a smaller version of that used in the space elevator. Just as the original Panama Canal predetermined the size of the largest ocean freighters before the turn of the century, the space elevator's lift limit determined the weight of the sections in the tug design. Without this cheap means of moving freight to orbit, James Kennedy's project to terraform Mars would never have been feasible. In fact, because this would provide SpaceLift with enough business to finally make them profitable; a special rate was negotiated for all lifts related to the project. The CEO wished he understood just how much business this represented and the amount of weight the nations of the world would throw its way.

## 5. INTERVIEW

"I'd like to welcome our guest, James Kennedy: Founder and Chief Executive Officer of the Mars Terraform Project." The host got up and shook James' hand before they both found their seats.

"Welcome and how are you today?"

James answered, "I'm good, and thanks for having me."

The host remarked, "Our pleasure and honor, as we know you must have a very busy schedule."

James shook his head. "Not at all, actually. In fact, the most important task I have on the project is getting the word out. The countries and states are the ones doing the real work."

The host nodded. "And after two and a half years since the first impact, how is that work going?"

The thought of the anniversary brought a difficult memory, but James forced out a smile and replied, "Well, things got off to a slower start than I expected, but once the confirmed orbit reductions came back, the number of

vessels have doubled and we are nearing our goals to meet the 2057 deadline.”

“Some say that impact will throw off Mars’ orbit enough to send it past us and into the Sun. What do you say to those claims?” asked the host.

“If we could push it that far, and we can’t, we would probably want to direct it into Venus. If we had an impact strong enough to speed Venus away from the Sun a little while clearing away some of the extremely dense atmosphere, we could potentially make a world much more like our own. But to push Mars that far would require a collision with an object close to its size. Ceres is large, but much smaller than the size of our moon, let alone Mars. In fact, it would be nice if we could push it a little closer than what Ceres will provide. Who knows, maybe an unknown comet will pass our way and give us a little extra nudge.”

“For almost a hundred years, people have claimed to see flying saucers from outer space. Now there are a thousand out there from Earth. Isn’t that ironic?”

James got a laugh from the question. “That is funny, isn’t it? Of course, we designed the asteroid tug ships in the shape of a disk for a number of reasons. I guess for some of the same reasons visiting aliens might have chosen to make their vessels round, if you believe in that sort of thing.”

The host couldn’t resist. “So I guess you don’t believe in aliens?”

James gave a smile. “Area 51, right? I’d actually be surprised if there wasn’t any other intelligent life out there. However, unless they find a way around Einstein’s galactic

speed limit, I think we're safe in our little isolated region of space."

"So you're saying we couldn't use this technology to fly to planets around distance stars?"

James replied, "If that were the case, I think I'd be out of a job."

The host gave a curious look. "Well, why can't we?"

James was a little surprised the host was naive to the great distances at work, but was happy to answer the question, especially for any young folks who would view the feed and want to learn. "Well, the closest Earth like planet is about twenty light-years away. So, if we send a ship that can accelerate to near the speed of light very quickly and slow down at the same rate, to us, it would take them at least twenty years to get there."

The host nodded. "I see. I don't think I would want to be stuck on a space ship for forty years."

James smiled. "Well, the good part is, you wouldn't have to."

The host looked a little concerned. "So you would expect them to stay and live there?"

James shook his head. "No, they wouldn't have to stay and to them it might only seem to take a couple years to get there and back."

The host got defensive. "Wait, you just said the whole trip would take at least forty years."

James nodded. "Yes, to us on Earth, they would be gone at least forty years, but it wouldn't seem that long to them." James waited for the host's confused expression to deepen, and then continued, "You see, time slows down as

you approach the speed of light. Their clocks would run slower, their bodies would age slower, because time itself would be moving slower for everyone and everything on that ship.”

James could tell the host didn’t quite get it, but he played along anyway. “Okay, so if it’s only a couple years, why doesn’t someone go? Most of your crews signed up for a ten year mission on their ships. Shouldn’t it be a simple thing to get a crew willing to make such a historic trip?”

James admitted, “If it were only a two-year round trip, I’d go myself, as long as I could bring my wife along. I don’t think she would be very happy ending up forty years older than me when I returned. Of course, using the technology we have now, the trip would take at least two-hundred years each way.”

The host was still contemplating his wife being forty years older, but decided not to go there. Hearing the second part of James’ statement, he asked, “Ouch! Why so long?”

James answered, doing the math in his head, “As I mentioned before, Einstein’s galactic speed limit is the speed of light. This is three-hundred-million meters per second. The Earth travels around the Sun at thirty-thousand meters per second, or ten-thousand times slower. If one of our tugs used all their water to accelerate non-stop for a week, they might be able to get up to about three-million meters per second, but they would have no water to drink, produce oxygen or grow plants for the long trip, let alone slow down once they got there, if they lived that long.”



The host smiled. "I see. So I guess your job is pretty safe?"

James gave a quick laugh. "You could say that."

"On the project site, I notice the mission statement: 'A common effort greater than the pyramids, higher than the Moon, truer than religion.' Does that mean you do not believe in God?"

"No, I wouldn't say that. In fact, the universe is far more beautiful and complicated than any of us could have ever imagined. Indeed, there is a divine fingerprint on the laws of physics. I do; however, question the written works of religion made by fallible individuals who are no longer around to argue their truths."

"Fallible truths? As with Jesus?"

James responded, "No, not Jesus. I would say he spoke real truth, but was used by others to invent religions to control the masses. If I could, I would like to provide people with a new method to benefit from his teaching."

"How would you do that?"

"Jesus' most basic principle is forgiveness. To forgive ourselves and those who have been unfair to us. Naturally, people do not want to give something to someone who has wronged them. Instead, they hold hatred against this person. Hatred that clouds their own life while doing no harm to the person who wronged them. I would have people learn to let go of this hate for their own benefit. To be accepting of others without placing the rules they write for themselves onto the world. It is for each of us to draw the line between black and white."

“But with the drastic decline of organized religions over the last decades, how do you go about spreading that message?”

James answered, “I’m doing it right now. I am standing up for what I believe and making it known to anyone who would listen.”

“If it is so simple, why is there so much misery in the world?” asked the host.

“Because life is hard, forgiveness is hard. Even something as simple as purpose is hard. I have a dream that gives me purpose. My purpose gives me the strength to fight life’s challenges. Conquering those challenges gives me the confidence to accept myself for who I am. By accepting who I am, it is easier to accept those around me. That acceptance makes the world less complicated for everyone. Four thousand years ago, Confucius said, ‘Let father be father and son be son. Let farmer be farmer and politician be politician.’ This simple law, to have people focus on their own role in society instead of spending so much effort criticizing the roles that others play, reshaped the Chinese people to be more communal and happy. Let us all educate ourselves to these truths and use them in our own life. For example, money is more tangible than happiness, but most people say that they would rather be happy than rich. It is in our nature to survive at the cost of others, but true joy in oneself is gained by doing right by your fellow man. This contradiction is at the heart of the human condition. Help people understand what makes them human and they will choose to do the right thing for their own sake.”

“You talk about forgiveness, which makes me think of your son Cody. I have to say, if that happened to a child of mine, I don’t think I could be so forgiving. Can I ask how you were able to?”

James hesitated for a few moments before answering. “Like you, I am human. My initial reaction was to seek revenge and kill who did this. The clocks were running day and night in my head about how I would track him down and what form of death I would put him through. But, the more I thought about the methods and visualized my execution of the deed, the more it made me feel like a murderer myself. On the morning of the funeral, I woke from another haunted sleep. Running on autopilot, I got myself together and thought of some words I wanted to say before getting into the limo. On the way in, I drew down the window to feel the wind or anything other than the sick feeling in my gut. Just then, a ray of light from the Sun reflected off a broken pane of glass on a passing building and burned into my eyes. For a moment, I was grateful for a sensation that masked out the pain I was feeling. I know it was only for a second or two, but the moment carried in time before the pain in my eyes took over and forced my lids shut. There, within the darkness of my overloaded optic nerves, I saw a floating cross. I know it was just a simple visual echo of a bright diffraction of light, but I felt something. Or should I say I was made aware of the feelings that were no longer present. Removed were the hate, blame and confusion. I don’t know if the thought or feeling came first, but I realized this man was not solely to blame. He wasn’t born a child

who wanted to grow up to be a murderer. He was like Cody and other children; he wanted to make friends and play. Somewhere along the line, society went wrong for him. Is that his fault or the ones before who failed to build him a better society? And when they failed to build a better life for him, did they accept this failure or displace the blame? Of course it is easier to blame, and that gave the child cause for hatred. The hatred bore a dark purpose that led him to that tragic day. So maybe the answer is as simple as accepting our failures and to never stop trying to work towards their remedy. People understand the word well that blocks our ability to accept failure, but not as much the one which describes our capacity to accept our faults.”

The host knew the words. “Pride and humility?”

James looked back at the host, not realizing he had been staring off into space. “Exactly so.”

The host asked, “And so you wrote what you said, there in the limo?”

“I didn’t write it as much as I knew what I wanted to say.”

The host looked surprised. “You mean you got up in front of the congregation and the rest of the world without a script in front of you?”

James smiled. “Is it that hard to believe? You’re doing it right now. Sure, you have a list of questions you might like to ask, but the conversation takes its own course. I was just having a conversation.”

The host nodded. “Hmm, I guess so. Well, whatever you said, it worked. The young man who threw the gre-

nade turned himself in and apologized for the misguided deed. Are you sorry to see him in jail, perhaps for life?"

James shook his head, "Of course not. He did something dreadful and like the rest of us, he needs to accept the consequence of his actions. But that does not mean he can't still have a meaningful life. The positive influence he now provides others in his culture might help them to avoid steering down a similar path."

"People learn from experience and your handling of the tragedy seems to be a very educated response. Certainly, you must have been wronged before, no?" asked the host.

"Yes, we all have in some small way, I guess. My first marriage ended in a poisonous divorce. It is far from uncommon, but the pain is no less real. Any man who has his family taken from him by the person whom he trusted most, will tell you forgiveness is no small feat. Especially when he is given a constant reminder of that failure."

"Failure? Whose failure?"

James answered, "In short, mine. It serves no purpose for me to find fault in others, because I am the only one I need to change. As an engineer, I expect to make mistakes while learning from them to improve my designs or in this case, my life."

"So if it was your fault, how were you wronged?"

"Fault is different from failure. If you do everything you know to lead someone's choice towards devotion, you can be clear of fault even though you failed in your goal. In the end, it comes down to a chain of actions brought on by a single choice of an individual. Everyone has the right to

choose, and the rest you have to write off as a life lesson. It has given me a greater strength, knowledge and purpose, because I was able to forgive and make my life about the gray path I pave.”

“And where does that path lead?”

“When I was a kid, during the Mars landing, I dreamed of living on a transformed Mars. Dreamed of swimming in its ocean, climbing its mountains and making big, acrobatic jumps in the reduced gravity. Of course, my dreams did not include wearing one of those faulty atmospheric Mars suits.”

“But even if everything goes according to plan, you will never get to live your dream.”

“That doesn’t diminish the dream and in fact, some ways, the dream is just as important to me. If Mars magically turned green tomorrow, my dream might be realized, but it would also be concluded.”

The host looked surprised. “Come on, you would rather the dream over the reality?”

“No, I would take the reality, though I would have to find a new dream to guide my path.”

“I’m curious, most people start projects that they feel they can complete. You started a project which you know can’t be completed in your lifetime. How do you feel about that?”

James said, “I feel I have already completed what I set out to do. Get the project past conception and into the hands of the world. What greater purpose can a man have than to give purpose to the people of the Earth?”



The host agreed. "Quite true. And as some have said, that purpose could be the reason for the drastic reduction in violence throughout the world."

James smiled and said, "Well, you can't fight hatred and blame with more hatred and blame. I think if we have the purpose of hope, we truly can be 'brothers not just across oceans, but worlds,' as Conrad and Cody would want."

Across the oceans of this world, Kulari drew no hope from the broadcast, but more hatred. His servant happily echoed the words, in his native tongue, that others were saying, "The New Prophet!"

Kulari spat at him, "You would call this godless man a prophet?" as he pressed him back against the wall and brought his face within an inch of the man. "Perhaps you would like to join him on his quest?"

The servant nervously shook his head until his expression suddenly changed to one of shock. Sliding down from the wall, his mouth and eyes were still open as he died. The knife, visible under his left arm, penetrated sideways between the ribs and into the heart.

"Allah did not give this infidel the power to fool my people, but He will give me the strength to undo his damage," Kulari spoke as he withdrew the knife.

The clothes of the dead servant erased the blood from his blade and a nod to the standing guard saw to the cleanup of the rest.

Kulari made it to his office up high in the mount and sent out two encoded transmissions. He used the delay of their reply to meditate until his blood cooled and his head

cleared. He picked up the crystal orb and spun it slowly, hypnotized by its fractured interior.

It took only minutes for the first reply to come in. A young man of Afghani descent appeared before Kulari, showing all the detail of his scruffy face and less than clean appearance. The inside of his New York apartment also presented less than a tidy surround, but Kulari knew this to be typical for the local youth. The man's mission had been to blend in and provide surveillance. He had patiently succeeded in this task, while using much of his free time to train in various styles of the arts. The classes offered education towards the final occupation that he looked forward to consummating with one simple motion of a blade across the soft flesh of his prey.

"Thank you for the command, father. I will not let you down."

The second reply took the better part of two hours. Torakos' form appeared, wearing the standard issue space compression suit whose seal covered part of the scar that ran up his neck.

"Your day has come, my lord. We are approaching the city of the damned and are but hours from enlisting the will of Allah. By your command, this world will be but a grave and the western design it was built upon a thing of the past. A new era has begun. God is great!"

## 6. MARS MISSION

The reddish world slowly filled the sky until the resistance of the atmosphere built up and produced a fireball around the falling object. “Atmospheric interface,” was all Conrad Sebastian could say before his message was cut off.

It took ten minutes for the transmission to reach mission control. “Florida Command, this is Mars Orbiter. Falcon has entered the atmosphere.”

The couple, who married prior to the launch, gazed at the beautiful world, with the lander streaking across the reddish sky.

“Looks like they’re coming out of it,” said the orbiter pilot.

The systems engineer smiled as she leaned down to reestablish communication. “You guys out of the woods?”

“Yeah, I wouldn’t mind some wood to knock on,” Conrad spoke, noting their descent speed. “Extending wings twenty percent.”

The thin atmosphere kept them falling more forward than down, but they were falling fast. It was a first for a

retractable wing entry vehicle, but Mars presented a lot of firsts.

A plane design provided the highest safety margin while still remaining within the weight limits. If something went wrong during entry, they had the control and thrust to regain orbit. If they were heading towards uneven terrain or even a sand storm, they could maneuver around. But most importantly, this avoided the use of a high-speed parachute that had a much higher likelihood of failure.

Conrad eased down from the thirty-degree glide as he extended the wings to full length. "Landing site five degrees to port," stated his copilot Frank.

"I see it," Conrad said as he made a gentle turn to the left before the final phase of the landing. "Take a good look while you have the chance. Control has most of our schedule booked, but it doesn't mean we can't freelance a little."

Without thrust, Falcon lost altitude by the second. When they reached the oceanic basin, Conrad alerted his crew, "Switching over to the computer landing sequence."

The bird slowly leaned back with its wings extended, like a predator swooping down to scoop up its prey. But this was no hollow boned hawk flying on instinct; it was a hundred metric ton behemoth with a belly full of fuel. The vehicle continued to nose further up as the wings curved to compensate. The new active wing design took Falcon down to 800kph, but the plane was beginning to lose lift.

A set of three capsules shot from the vehicle, one above and to the rear, followed by one to each side. The smaller, rear parachute opened quickly, controlling the deceleration beyond the ability of the expanded wings.

The larger chutes opened and caught the weight of the vehicle, pulling it into a forward swing. With a little help from the tail chute, the plane avoiding swinging past vertical into a massive pendulum.

“2000 meters...1700...1200...engine ignition...” Frank reported.

Red dust and rock spewed off the surface, scraping across the sides of the wings and fuselage.

Frank continued, now shouting, “900... 700... 600... 500... 400... 300... 200... 100... 50... 20... 5... touchdown!”

One long sigh, in unison, was heard over the headset. Karen was relieved she wasn’t the only one, but added anyway, “Welcome to Mars.”

Conrad was not amused by the laughter that followed and quickly broke it up with a request for a full systems check.

“Wings ejected and doors closed. Fuel level 87% and holding. All systems show green. Looks like we broke the curse,” said Karen.

Frank broke in, “Woo, since we just got here, let’s not go tempting the fate gods.”

“Agreed!” said Conrad and quickly set to change the subject. “Mars Orbiter, relay to command, Falcon has landed.”

“Copy that Falcon. Getting your status data and will redirect along with the message. How was the landing?”

“Walk in the park,” radioed Conrad.

“Walk in the park? It felt like we were flying through hell,” said Karen.

“The flight was fine, but the delay before the parachutes caught made me think we were going down hard,”



commented Frank. "Glad we didn't eat first. That reminds me, I'm hungry."

Conrad responded, "We'll eat when our system checks are done."

Once their status was confirmed and control radioed back with the "Go for Mars walk," Conrad, Karen and Frank set out for the historic event. Conrad thought long and hard over something to top Armstrong. Descending down the lift, he felt a surge of life as never before. Throwing out what he had written, he step down to the surface and said, "I claim this world for the people of the Earth. For them to share in peace as brothers, not just across oceans, but worlds."

Unbeknownst to him, the tear in his suit under his arm was just starting to form.

Dawn Sebastian awoke from the nightmare in a better place than the twenty-five years past. Hearing Conrad's words echoed by James, with the same feeling of hope and accomplishment, restored purpose to her husband's abbreviated life. She looked over at the picture of her son, portraying the same strength and eyes of his father. "He would have been proud of you Gerard," she heard herself say. With the realization of their similar age, she added, "Please come back safe baby."

## 7. CHILD'S INCEPTION

As with the moon, man had conquered Mars, only to leave it as the desolate place it was. And just as quickly as those who gained attention to its cold, thin atmosphere, rocky and mountainous landscape, the attention faded. So much spent and the loss of Conrad Sebastian took the wind from the sails of achievement.

A curse did seem to plague Mars. As far back as 1960, with the Soviet Korabl 4, there had been dozens of failed missions. In fact, two-thirds of all missions to Mars ended without meeting their objective. And although the rest of the crew made it back safe, the rocks returned failed to provide what everyone hoped: evidence of ancient life.

At the time, James was only a kid, but could tell you as much about the solar system as a NASA astronaut. He couldn't see how the loss of one man could have deterred from such an amazing mission. More than ever, he wanted to be flying across space to visit this foreign place.

And where everyone saw a dead, reddish wasteland, James saw the banks of rivers and beach lines around an ocean. Twenty years before the landing, the Mars Global

Surveyor provided details about a ridge that spanned the planet. Photos had already showed features that looked similar to those on Earth where the land meets water. Some argued that these features could have been a natural slide of sand down a hill. However, the survey revealed that the ridge feature occurred at the same elevation across the planet: the Martian sea level. Not just a sea, but an ocean that covered a third of the surface. Mars once was a blue jewel as our own, but something changed that long ago.

“Dad, couldn’t we use rockets to move Mars? If we bring it to the Earth, it could circle around just like the moon,” asked a younger James.

His father responded, “Careful what you wish for Jimmy. If Mars was set to orbit the Earth, or even closely pass us by, the forces on the Earth would cause tidal waves, earthquakes and volcanoes the likes of which we have never seen.”

Jimmy smiled and said, “Cool!”

His father was not as amused. “Cool? It could kill half the people on the planet.”

Jimmy changed his expression. “Okay Dad, maybe it wouldn’t be so cool, but what about moving it closer?”

“Jimmy, if you could get all of our rockets over to Mars, you might be able to slow its rotation by a minute or two out of its twenty-five hour day, but I doubt it would have any effect on its orbit.”

Jimmy didn’t like the answer, but continued to think about a solution to the challenge that was stuck in his head. “So you’re saying we need better rockets?”

His father was amused by his son's persistence with a silly and impossible task, but didn't want to suppress his excitement. "You know Jimmy, there used to be another Mars which had an orbit very close to Earth."

This sparked Jimmy's curiosity. "Really? Where'd it go? Did it get sucked into the Sun?"

"Nope. It crashed into the Earth."

Jimmy scrunched his eyes. "Are you pulling my leg, Dad?"

Mr. Kennedy shook his head.

"Come on. You said it would kill half the people if it just flew by. How could anyone be around if it crashed into the Earth?" asked his son.

"Well, we've only been around for a hundred-thousand years, but this happened a few billion years ago. And luckily, it gave us our moon, which helps us to stay alive."

Jimmy asked, "How does it do that?"

"I'm not going to tell you. But when you find out, I'll have a surprise for you."

Jimmy smiled. The last surprise was a quarter-meter reflecting telescope. He was still puzzled though. Jimmy had read all about the other planets and their moons; yet he couldn't answer what seemed to be a simple question about his own.

## 8. THE HIVE

It took the better part of a month for Virginia-7 to catch up to Ceres. Since the band of closer rocks had already been cleared, tugs had to dig deeper around the asteroid belt and drag these objects further and further to the dwarf planet. And with each fly-by, Ceres was falling further from its original orbit.

Evan confirmed the trajectory with Ceres Station before unhooking from the asteroid to watch it whip around the far side of the world and down towards the inner solar system in a reverse orbit. In a month, it would find its way to Mars, providing extra mass, heat and a small nudge to lessen its orbit.

With the job done and the show over, Evan set course for the station to rehydrate and enjoy a couple day break from the void of space with the likes of three men. "I should have signed up for one of those co-ed tugs."

Gerard laughed and said, "Man, you might as well be married if you're going to spend twenty-four seven with her."

“Twenty-four seven?” Tom commented, “Does that have any meaning out here?”

Peter broke in, “Yeah, what’s the date back home, anyway?”

Gerard laughed and said, “Might as well be Christmas, because the bee hive is almost full. It’ll be easy pickings.”

Tom shook his head. “I hope you got all your STD vaccines before leaving Earth.”

“Even if I didn’t, who would I catch anything from? Everyone out here has been screened and given a ten year contraceptive.”

“You make it sound like an orgy,” said Evan.

“Yo dude, it’s only one girl to every four guys. That sounds a little too Greek to me. I’d prefer one on one,” said Tom.

“One on one, huh? I hear Peter is single,” laughed Gerard.

Peter didn’t miss a beat. “Well, I was a virgin until Tom and I did the wild thing down on the pod while Evan was off rescuing your ass.”

Tom was noticeably flustered by the joke, and paused a second too long to come up with a good response.

“Mayday, Mayday, Mayday!” came over the open frequency. “This is Iraq-6. We have lost water and am floating towards Ceres without the ability to correct the course of our rock, ‘Baqubah’. Please provide assistance.”

“Copy that Iraq-6. We’ll send up a tug.”

“Ceres-1, this is Virginia-7. We are in a position to assist.”



"Roger that Evan. Please set an intercept and extend your umbilical. Are you guys sure you have enough water to share? I want them to be able to maneuver and dock under their own power."

"It's tight Henry, but we should be able to swing it. Still, you might want to send a tug to back us up."

"Acknowledged, Mississippi-2 is standing ready. Keep me posted. Ceres-1 out."

Evan reversed course and accelerated hard towards the drifting vessel.

"You want us to use the pod to connect the umbilical?" ask Tom.

"Negative. It'll be easier just to dock with them."

"You ever do that?"

"First time for everything," said Evan.

It was a slow process matching velocities and rotation to marry the bottom port bays of each vessel. The sight, sound and shutter directed Evan to verify the computer's confirmation of the link. Together, the two tugs looked like a butterfly yo-yo, with the string leading sideways towards the large asteroid.

"Iraq-6, this is Virginia-7. The connection is complete. Prepare to receive water and power for a jump start."

"Yes, thank you Seven. How much water can you supply?"

"We have about a quarter tank. We'll pump most of this to you to make sure you have enough to get your rock back on course. Next time, I suggest you grab a smaller rock or take your time bringing it over."

“Yes, sorry. This was our first tow and I seem to have miscalculated our water usage.”

Evan noticed the water drain and the surge of power sent over for their ignition. With his own tanks getting close to empty, Evan cut off their siphon, thinking they would have otherwise taken his last drop.

“Transfer complete, Six. I’m disengaging.”

Evan pulled Virginia-7 to the side to give the Iraqi vessel a wide birth and to keep an eye on their flight path.

“Look at those freaking bozos. They keep over correcting their course,” said Peter.

“No wonder why they lost water,” said Evan.

“Maybe we should help them steer.”

“With what water? Besides, they have to figure out how to fly. Just give them some time.”

“Give them time? If they don’t have the course set, they could miss Mars and have that thing hit something else.”

“Ceres will confirm their course. Besides, it looks like they got it now.”

As they drew closer, the Iraqi tug retracted their ribbon and set an initial orbit around Ceres. The trailing rock tried to follow, but its mass overcame Ceres’s gravity, hurling itself down and towards a waiting impact with Mars.

“Virginia-7, this is Ceres-1. Thanks for your help up there guys. You are cleared to land at gate Delta-25.”

Evan radioed back, “Copy that Ceres-1, gate Delta-25,” and set course for the vacant dock.

He turned around and gave the order, “Okay guys, secure in for dock. I’m reducing rotation in ten seconds.”

Gerard and Tom circled around towards another console. Tom grabbed his skateboard on the way and echoed the words Gerard spoke just a few weeks before, "Catch you on the flip side."

As the rotation slowed, Tom jumped on his board to ride the wake around the perimeter. He ollied up and kicked the board into a triple tre-flip, landing the trick that was only possible during gravity reduction. "Oh my God, that is so much fun," he said coming back around towards Peter and Evan.

"Catch a seat fly boy; we're heading down," said Peter. "Blow me," he replied, riding past.

Suctioned to their seats, the other three felt the starting sensations of weightlessness. Tom built up as much speed as he could before the rest of gravity washed away. His forward motion around the curved surface was just enough to maintain his footing on the board. The ability to ride declined as he slowed. At the last second, he nollied the front of the board and threw himself into a back flip, catching the board that bounced up from the floor behind him. With his other hand, he grabbed the chair next to Gerard and pulled himself around to secure in.

The tug slowly descended down the vacuum of space, being all that covered the sphere outside the station. The thrust of the engines was more than a match for Ceres' gravity. With only three percent of that on Earth, the weak natural gravity needed to be artificially subsidized for people to be stationed there.

The gate extended a piston tube up to meet the approaching tug. The tube covered the central tug port

and bore the weight of the ship. The tug's connection contained a ring that could maintain an air lock with the gate and resupply their water, even while rotating. Once the dock was complete, the tug slowly reengaged rotation. The design supported docking under rotation, but the Russia-24 accident mandated that all future docks be made in stationary mode.

Tom and Gerard were first to disembark. Instead of using the ladder, Tom did a back somersault down to the airlock below. Gerard smiled and dove down head first, landing in a handstand.

Tom laughed and said, "Are you going to walk on your hands all the way to Alpha-2?"

"You know that I can," said Gerard.

"Anyone could here you bonehead."

"Perhaps so jerky, but I'll bet you a week's wage I can make it more times around the tug on my hands."

Tom said, "I'll gladly take your money, but let's make it a day's wage. Wouldn't want you explaining to your mother where the money went."

Tom hit the button to the door marked "C-17". Walking through the door, Gerard confirmed, "Deal. I might as well get the first round, because I'll be collecting your credits once we get back."

The gate/airlock was the primary component of the station; the only other being the long tubes that joined the airlocks together. Each airlock supported a connection to three horizontal tubes, leading out a hundred and twenty degrees from each other. The view above presented a hexagonal grid of tubes with circular vessels docked at each

of their intersections, commonly referred to as the "Bee Hive".

Towards the center of the grid, was a larger, non-rotating, mining vessel. The engines and crew relied on water. While Ceres contained a limitless source, it would be worth nothing to them sitting a kilometer below the surface. The first crew to Ceres founded the station on a flat section of the dwarf planet and set their drills to establish a supply. A set of tugs followed, each dragging an airlock and connecting tube along. As the fleet grew, so did the station grid, forming a dock for every ten ships. The web of interchangeable components made it easy to build and swap out damaged sections as seen in the accident: Landing just off the central latch, the rotation of the Russian ship jammed the ring and twisted the airlock, causing it to crumble under the massive torque of the tug. Fortunately, the pilot throttled up out of the mess before the tug could spin like a top into the adjoining vessels. If the tubes were formed in straight lines, the accident could have blocked crew from gaining access to vessels beyond this port. The redundancy of the design allowed them to detour around the crash zone.

Being a little too light on their feet, Tom and Gerard used the hand rungs above them in the two meter diameter tube to quickly traverse to port C-17. Underneath them was a flat walk way that covered water and electrical lines. The ladders within the tube were the same in the shorter, vertical port tubes. The airlock opened under command and they passed through to reveal the same small room

they had just left. The only obvious difference being that the doors were marked C-19, C-15 and back to D-25.

Gerard was about to press the release for C-15, but Tom stopped him. "Dude, let's by-pass A-1 this time," he said, pressing the button for C-19.

Gerard responded, "I just follow the lesser letter or number rule. How do you even remember this grid anyway?"

Tom replied, "What's to remember? The center Alpha hexagon has six ports. Each letter out has an additional twelve, so Beta has eighteen. Section Charley has thirty ports. That means C-15 and C-17 mark the middle of the odd section."

"Man, you lost me," said Gerard as they got through C-19 and headed for B-11.

Tom continued, "It's not rocket science, Dude. We're just east of the middle, so we can zigzag over until we get to the even part of the A's."

Gerard asked, "What's so wrong with going through A-1, anyway? The last time, we met those two girls from Georgia-4."

Tom laughed, "You mean you met a girl and I got stuck talking to the she-man."

Gerard joined him in the laugh. "That's right; she was a little beastly, wasn't she?"

Tom continued, "Besides, I'm here to build something other than short term relationships."

"Relationships? Who said anything about relationships?" asked Gerard as he pressed the button to B-11. The



air that cycled into the tube filled their nostrils with the smell of food. "Man, what's that? Smells like Indian."

Tom replied, "It's Pakistani."

Gerard asked, "How the hell do you know that?"

"Because the sign says 'All you can eat Pakistani Buffet, twenty-three credits,'" said Tom pointing.

"Smart ass. Smells good, though. You want to hit that before getting drinks at A-2?"

Tom replied, "So you're saying you're glad we came this way?" and jumped up the tube.

The port bay had another sign to lead them down a radial tube to the reception area. "Hello, I am Bohem, welcome, welcome..." said a kind man who led them around to a seating console with a red checkered tablecloth and a fake sunflower in a small, faded green vase. Tom looked to see another server and nine people sitting at tables around the arched, makeshift restaurant.

Gerard picked up his plate and Tom followed. "I guess I know what these guys like doing during the long hauls," said Tom looking at his friend who responded with a blank expression. "Cook, you moron," added Tom.

"Probably beats skateboarding," said Gerard.

"Nothing beats skateboarding, especially in space on a circular ship."

Gerard motioned behind him. "You're saying you'd rather be skateboarding than making out with her?"

Tom looked behind him to see an attractive woman with deep olive tanned skin. There was something in her appearance or mannerisms that convinced him she was not American. Probably Greek or Persian, he thought. "I

can do both dude. Besides, even you can't spend all your time hitting on women."

Gerard laughed. "Hey, as long as we're docked at the station, I can try."

Tom half expected Gerard to walk over and sit next to her. "So, what are you waiting for?"

Gerard answered, but in a voice just loud enough to carry, "You think a beautiful woman, sitting alone, eating dinner would want me interrupting her, talking in a language that she probably doesn't understand?"

Tom ducked his head a little at first with the words coming out too loud, but the realization made him nod and admire the play Gerard had just made. If the woman understood, she made no indication. Gerard waited the couple seconds and returned to their table with a plate full of food. Tom followed, eager to try out the samples of food on his plate that he had no idea to their substance.

Tom and Gerard enjoyed the first round and went back for more. The vegetarian meal consisted of white and flavored rice, with various spicy sauces and side dishes.

The host was pleased to see people enjoying the food he prepared. This was his greatest joy since leaving Earth. The smells of his mother's kitchen brought him a peace he only knew when his family gathered. He walked around to the customers as much for his own sake as for his patrons. "Hello, hello. I hope you are enjoying our food."

Tom was first to reply. "Dude, these are so good. What do you call them?"

"Oh yes, that is Achar Gosht. My family's special recipe."

Gerard asked, "You have a large family back home?"

Bohem replied, "Oh yes sir. I am one of twenty-six cousins who live outside of Peshawar."

Tom asked, "Peshawar? Isn't that up on the Northern region near Afghanistan?"

Bohem nodded. "Oh yes, yes. The mountains are the most beautiful in the world. I do so miss them."

Tom commented, "Right, some of the tallest in the world. You know, when we finish transforming Mars, our children will have the opportunity to see mountains three times the height of those on Earth."

Bohem admitted, "That is a sight I would like to have my children see."

The host went back to attend to the food. Tom was preparing to say something, but followed Gerard's gaze to see, over his shoulder, the olive skinned woman walking by. As the woman passed, she paused, looked over towards Gerard and spoke in what Tom could only describe as the most sexual voice he had ever heard. "I think you're beautiful, too."

Gerard smiled and said, "Thank you," before she continued off to the exit.

Tom shook his head. "You suck dude. So, are you going after her?"

Gerard leaned back in his chair. "Nah, we'll meet again. It'll give her time to build up some anticipation. Besides, if she wanted me to follow her, she would have given me a sign; like touching my arm or something."

Tom disagreed. "Wait, you're saying she wouldn't have let you walk her back to her tug if you asked?"

Gerard tilted his head sideways. "I guess she might have, but we just got here. If I go back with her now, I'd be stuck entertaining her the next couple days. After a month on the tug, I need a drink."

"Cool. Let's pay the bill and get out of here," said Tom, waving over to Bohem with his card in hand.

Bohem returned, pulling out his own card with the twenty-three credits already displayed. Tom said, "make it twenty-seven," punched in the two digits and placed the card over Bohem's with his thumb on the sensor. Tom replaced the card to his pocket after the expected flash and beep. Gerard did the same and they both headed up the tube to the port access above.

Tom jumped down the port gate with Gerard following, still continuing the conversation. "I don't know if I'm going to run into her again, but it is likely. And when I do, we'll have something..." Gerard halted the words as he landed in the airlock that was slightly more crowded than he expected. "...to talk about."

A dark man as large as Gerard just stood there, staring into his eyes. Gerard stared back for a moment, but couldn't help trace the scar that ran down the other's neck.

"Damn man, you cut yourself shaving?" joked Gerard. Torakos said nothing, maintaining his gaze.

Gerard shrugged his shoulders before turning to follow Tom through the door marked B-13.

"You ever see someone so tan on the station?"

Tom laughed, "Yeah dude, you."

"Yo man, I'm black, not tanned," said Gerard.

"I thought you were only a quarter black?"

“Well, aside from my blue eyes, I look most like my grandfather. Like I said, I’m black, but that guy is painted brown.”

“Who knows. Maybe he just got here?”

Gerard felt uneasy. “I’ll tell you one thing, there is something wrong with that guy. Can’t put my finger on it, but I don’t like him much.”

Tom laughed. “I know. Maybe he’s the husband of that chick you were just hitting on.”

Gerard agreed. “That would be funny, wouldn’t it?”

Tom stopped and crouched down to touch the floor of the tube. “I think this is blood.” Both of them looked back.

Gerard smile. “The bonehead probably hit his head on the airlock.”

“Screw him. Let’s head to California,” said Tom, leading the way.

## 9. CALIFORNIA-2

For lack of a better name, the gate at Alpha-2 became the permanent home of California-2. It started when Ted Dillinger converted one of the outermost water chambers of his tug into a garden. Ted and the other members took advantage of the supply of fresh fruits and vegetables to put together alternate meals to the prepackaged variety that was shipped out on the monthly route.

But the real draw to Ted's garden was not the food. When the project was started, it was easily decided to prohibit all alcohol and drugs. It took some time before James got wind of the recreational agricultural developments of the crew from California. On the second year of the mission, he heard the rumors and decided to make a surprise visit. He had already been discussing the approaching proximity between Earth and Ceres with his wife. When the news came in, Mora could only feel that the rumor was yet another invention designed by her husband to buy himself a little freedom.

To James, it was necessary, but that didn't stop him from treating it like a vacation. As before, he enjoyed the



flight to Ecuador and the elevator ride to SpaceLift Station remembering how Mora couldn't relax until her feet were set back down on the only world she ever knew. No, flying was not for her, let alone a two month trip to the far reaches of space. Instead, she used the excuse of her daughter, who was already away in college, to avoid the panic that ensued when she contemplated the long and distant journey.

Although it was similar to the station, the supply tug was a piece of land James could call home. He stepped within, looked around and thought, 'I built this!' The effort might have been indirect, but the feeling was no less valid.

"Welcome sir, to New York-1."

"Thank you Captain. It's good to be 'home'," James remarked, still looking around.

"Indeed. In that case, let me show you to your pent-house apartment."

"Ha ha, that's a good one." James laughed.

As with the others, the room was small and showing some signs of wear from a year and a half of personnel transports. But James was not one to be catered to. He preferred to work, eat and live with the people who were helping him to realize a dream. He simply smiled and put down his bag. "Thank you Captain, this will do fine."

Exhausted from the day's travel, James leaned down, but not to sleep. Instead, he dug through to pull out a round tea bag and a metallic cup he brought along for the trip. The kitchen station dispensed his hot water and provided a spoon for its stir. As always, he kept the bag in as he walked around to examine the crew torus. When the cup

had a third left, he squeezed out the excess and dropped the bag in a garbage chute.

“Oh, not in that one, sir.”

“Huh?”

“Maine-3 had some feminine products jammed in their system. Their attempts to clear it broke the flow mechanism and started to spill out in their crawl space. We swapped out this section with them and had planned to wait for a new unit from Earth before heading out.”

“Oh, so I guess that’s my fault?”

“I wouldn’t say that sir. It’s not a critical system. Just avoid using the plumbing on this side of chamber 9-B.”

“I see. Anything else I should know?”

“Well, if you want to go for a swim, you might want to try level seven. We have the eighth chamber salinated and filled with a large number of salmon and bluefish.”

“You have a fish farm?” asked James.

“Some of the tugs are set up for aquaculture. Ours is more for transport than spawning and growing.”

“You know, I am a certified SCUBA diver.”

“Well, I guess you could dive the tank if you wanted. The re-breather space packs are similar to those that recreational divers use. However, one whiff of the chamber and I’m sure you’ll change your mind.”

“I smell what you mean. Chamber seven it is.”

The first few days were very exciting for James, exploring the vessel, talking with the crew, playing with the controls and swimming in the tank on the seventh level. After a week; however, he began to understand the true nature

of the separation and emptiness of space for the people that were living ten years of their life with little outlet. Not to mention, the transmission delay made real-time discussions with his wife more frustrating than pleasurable. Although the people of the world primarily communicated in the form of recorded thoughts, Mora couldn't stand the feeling of this disconnect. His words were just an echo of those he spoke fifteen minutes before. She didn't know if it was a feeling of her own vulnerability or concerns for her husband.

As the days dragged on, James looked forward to his daily communiqués and played with the designs of a new propulsion system. His excitement was soon restored, seeing the moon-like dwarf planet grow in detail, brought in through cameras and sensors on the top of the vessel. He listened to the radio chatter and watched two tugs release their asteroids around and down towards the inner solar system. With nothing better to do, he worked on the math to calculate and confirm the effect the fly-by's had on Ceres' orbit.

The tug's scopes reached line-of-sight with Ceres Station. Again, his excitement spiked and somehow erased the vacancy he had felt in the empty space. He looked on as the world continued to rotate to reveal more. The small valley was filled with circular vessels, arranged like bees hovering over their nest. James had seen regular images of the station, but his being there somehow brought it to life.

An announcement was made, warning James of the tug's rotational reduction. He had made daily climbs up

the ladder to the port bay at level zero to enjoy the feeling of weightlessness, but having gravity removed out from under spooked him like the first earthquake he felt during a trip to California the year before. It seemed fitting that a tug from that shaky place was the cause behind his official visit now.

James tried to put on a hardened face, but his emotions were caught up in the moment. Although it was a simple jump down from the port bay, through the tube to the airlock, it was his first step onto an alien world. The designation, A-3, was marked on the floor with doors labeled A-1, A-5 and B-7. Although the world was foreign, the maze offered no challenge to James, as his brain was the source of its origin. From early in his professional career, James had a fixation with hexagons. From the design of buildings, mathematical puzzles, to a multiplayer version of chess, he loved the beauty and strength of its structure.

The door leading to gate A-1 opened by command. But where James expected a quiet and discreet walk through to A-2, the tube was filled with crew members applauding and providing him welcome. Frustrated with the lack of secrecy, his immediate impulse was to break up the celebration and track down the breach in his security. He hesitated a moment to take a breath and size up the situation. 'Most likely it was one person who caused the leak. How can I punish them all? And to what end? It would be like shooting myself in the foot.'

James forced a smile, stepped into the tube, and started shaking the hand of each crew member as he passed. The

next tube over was also crowded, so James repeated the ritual. He was convinced that his trip was in vain. With ample warning, he knew the evidence from California-2 was whisked away to another tug, which may or may not still be docked at the station. Going through the motions, he reached the gate and climbed the ladder up to California-2, needing only his hands.

“Welcome sir, to Ceres’ only resort. Could I take you down to one of our three inns for something to eat, drink or smoke after your long trip?” asked Ted.

“So you admit that you deliberately broke the rules on alcohol and drugs?” asked James.

“Not completely, sir. Since you are standing on California territory, pot is legal for recreational use.”

“But it is against the rules of the mission.”

“I understand that sir and I mean no disrespect. But your words also state, in the same mission guidelines: ‘Rules and customs are to be followed on each vessel as outlined by its supporting Country or State.’”

“A loophole?”

“Sir, please look at it this way. In the first year of the mission, there was a lot of excitement. But there was also a lot of tension from the isolation. We provide a service these people need. Since redirecting our mission to cater to the crews, people are happier and violent outbreaks, which are only natural in these tight quarters, have declined.

What’s more, we provide release in a controlled environment. Ceres Station is your territory. No one can remove any such substance off this vessel without being

in direct violation of your order. We strictly adhere to that order, sir.”

“Is that so?”

“It is a simple rule and the people are happy to abide by it.”

“Well, I am not so happy. But I do respect your honesty. It would have been safer to hide the substances, but you didn’t. I was married to a professional liar and still bear the scars on my back. If you had tried to cover this up, I would have made it my mission in life to see your crew replaced.”

“For you, I don’t think that would be a difficult mission, sir.”

James nodded and thought about the duration of the trip and the isolation he felt. He had already kept a close eye on the reports of scuffles and knew they had declined. He himself came aboard looking for an argument, with the stress causing chemicals still pumping through his veins in search of some physical release. James took a deep breath in and forced out the negative feelings with his exhale. “I don’t suppose you have something that tastes like Guinness?”

Ted smiled. “Right this way, sir.”



## 10. A NEW YEAR

Ceres Station didn't have the greatest accommodations, but it had a hell of a view. Jill Brand looked out at Jupiter from a window along a station tube that led to gate A-1. She loved to look at the stars from her console, but with Jupiter so close, the colorful layers and storms within the atmosphere were visible without need of a scope. The live, unenhanced view, although small and distant, was the greatest thing she had ever seen. Happy for the line that formed to the gate, she stood there mesmerized by the beauty of such a hostile place.

"You coming girl?" asked Rachael Hart, standing in front of the vacant airlock.

Jill gave a quick, "Whoops," and followed her friend through the door. "A-2 must be really crowded. I hope you don't plan on keeping us out too late?"

"Come on. You said you were going to let loose a little tonight."

Jill flipped her palms up. "I will, just don't let me get too loose. The last time, I drank too much and wound up getting lost in the hive, throwing up somewhere in C sec-

tion. And no thanks to you who ran off with some guy from Texas.”

Rachael remarked, “Well, I had never been to Texas.”

Jill shot her a look. “What are you doing, touring the nation? Besides, if you sleep with a guy from Texas, it doesn’t mean you’ve been there.”

Rachael laughed. “Come on, if we went to Texas, what would I be spending my time doing?”

Jill nodded. “Hitting on Texan men?”

“You got it!” said Rachael, reaching the back of the line to the airlock under A-2.

As Jupiter and Ceres reached their closest orbital approach, the teams gathered at A-2 to celebrate as if the alignment itself marked the start of the mission’s third year. Over the last few years, Ted’s crew put together stills for various brews, including a pilsner, ale, stout and a nice Merlot. Also within the shipment of vegetable seeds, privately arranged from a friend on the supply tug, was an assortment of fine greens. Ted especially loved what he called his fuzzy skunk.

Jill picked up the smell within the tube even before the airlock opened under California-2. “Wish they had an outside smoking section for those burnouts.”

Rachael rolled her eyes. “Oh come on Jill, you like your wine, let them have their pot.”

Jill jumped up behind her friend to the pod bay. Rachael was already starting a conversation with Justin, who sat guard. “Hey, how have you been?”

“Great, girls. Glad to have you back. You picked a good time. The place is really jumping tonight.”

“Oh yeah? Any hot, single men?” asked Rachael, with Jill embarrassingly shaking her head.

“Well, if there are, you’ll have to fight me for them.” Justin smiled, making a joke about his orientation. “Actually, a couple straight guys from Virginia-7 came in a few minutes ago.”

Jill looked confused. “How do you know they’re straight?”

Justin answered with confidence, “Oh, I know sister. Believe me, I know.”

Rachael wanted more information. “So, what do they look like?”

“Two cute guys: one lightly black man with blue eyes, standing about two meters tall and a dirty blond one who is a bit shorter.”

Rachael got excited. “Two meters, eh? How about his hands?” she asked.

“Like mitts,” Justin said, enjoying her increased anticipation. “They went down there,” he continued, pointing down one of the tubes.

“Lucky for you he didn’t point down the chimney,” Jill said poking her friend before heading down the tube.

Rachael smiled back at Justin. “Thanks. Catch you later...” and headed down herself.

Below, the music played, but at a level which made conversation easy. Jill no longer smelled that which escaped above, aside from what might have collected on

her clothes. Thinking about what Rachael had said, she restarted the conversation. "Maybe you're right."

Rachael gave a huge smile, not knowing what she was agreeing to. "Right about me making even this pressure-suit look hot?"

"Well, you do pull that off, almost as well as me. But I wasn't talking about that."

"Then what were you talking about?"

"About letting those who enjoy lighting up once a month to have their vice."

Rachael looked surprised. "Having a change of heart?"

"No, I was just thinking about what James said during that interview, last night. He said to let each of us determine our own gray path and not criticize others for the life they choose."

Rachael caught a glimpse of two guys around the tube, one taller than the other, enjoying a couple beers. She smiled at the larger one while finishing the conversation with her friend. "In that case, I choose the path to him."

Jill's own curiosity spiked and followed her friend's gaze.

Gerard took a drink with one hand and gave his friend a smack on the gut with the other. "Follow me."

Tom smiled and replied, "Am I following you or your dick?"

Gerard immediately went to work on Rachael, not knowing she was already convinced.

Tom awkwardly walked over and got his first look at the petite blond woman who stood beyond. The hesitation

and stare from Tom gave Jill a true glimpse of the man. She was surprised to find the wall she normally kept for strangers was missing. All he said was, "I've seen you."

Jill replied, "Well, the station can dock a hundred ships and we all come here every month or so."

"No, I've seen your picture in the design. You're one of the leading contributors to the ergonomic systems on the tugs."

Jill smiled and said, "Well, I wasn't going to spend ten years of my life someplace if I couldn't say where the knives and forks go."

Tom spoke in a less than serious voice, "Yeah, well why not make the rooms a little larger than an over-sized coffin?"

Jill got playfully defensive. "Oh, you think you can do better in providing a secure sleeping environment from micro gravity to external centrifuge gravity, to even the combine effects of Ceres' mass with centrifuge here at the station?"

"Okay, okay," Tom said, "maybe I'm just a little claustrophobic?" with a big smile to let Jill know it wasn't true.

"A claustrophobic? On a space tug? I bet you can't wait to get back home."

Tom replied, "Actually, I served six years on a Navy sub before signing up to build a world. For me, I find the view among the heavens far more appealing," as he turned to the live representation of Jupiter, its moons and

background stars in full natural view from a console a few meters away.

Jill thought to follow his gaze, but found herself watching him admire that which she had already come to love.



## 11. TORAKOS

Torakos returned from his task to see strangers on board, breaking his bread and drinking his wine. His rage was tempered only by his goals, which did not include making a scene for those around the station to discuss. He quietly walked over to Bohem, stared angrily in his eyes and handed him the torn pieces of his advertisement. "Get rid of them," was all he said before heading into his sanctuary.

Bohem and Akneem nervously cleaned up after the last of the guests left the tug. The joy Bohem had felt by helping others to experience part of his culture through the most basic of needs was replaced with fear and confusion. Akneem finished clearing the stations and storing the food, before sneaking off to bed. Bohem remained, trying hard to clean the plates quietly before heading off himself. A stumble caused the stack of plates he held to make a loud clack. He stopped and looked around towards Torakos' sanctuary, breathing a sigh of relief from the lack of further sound or motion. When he turned to look the other way, the plates made a louder noise, crashing to the floor in front of the feet of his master in the darkened tube.

Torakos started the conversation. "I did not bring along the extra food to see you feed the station."

Bohem lowered his head. "I am sorry, sir. I just wanted to share some of our world with these good people."

Torakos grew more angry. "Good people? You know nothing of these people and they know nothing of us."

Bohem looked up into his eyes, believing the words he spoke, "They make me want to know more, sir. And they seem interested in learning of us."

Torakos took the last step forward, ignoring the plates he stepped on to do so. "You were selected because of your devotion to protecting the culture of your people. Have you come all this way to betray them?"

Bohem broke eye contact, moving his view downward towards the plates. "I do not understand, sir. If we educate others to our culture, are we not helping to preserve it?"

Torakos grabbed Bohem's jaw and pulled his head up to reinforce the effect of the stare. "The only thing you should be worried about preserving right now is your life!"

Bohem nodded his head as best he could within the grasp of the larger man. "Yes, I understand, sir. It will not happen, again."

As he turned to retire, Torakos muttered, "No, for that is the last time you will see those people."

## 12. WORLD CERES OF POKER

Evan put down the deck and peeked at the pair of sevens in his hand. With six guys at the poker table, only the small and big blinds remained. Without showing any expression he said, "Make it a hundred."

His copilot, Peter, who had a ten credit chip in front of him said, "Yo man, why you gotta be like that?" throwing in his hand and the small blind.

Nick Beckman, Captain of Connecticut-2, peeked down at his cards and then over at Evan. "You got a small pair, don't you?"

Evan replied, "A couple twos. How did you know?"

Nick smiled. "Yeah right, twos. Probably more like eights. I'll put you all in."

Without changing his expression, Evan contemplated his hand and that of the only remaining player. 'He's saying he can beat a pair of eights, which beats my sevens. Or does he want me to think he can beat my sevens? Either way, he's saying he has a higher pair. So, what's the odds of that: the big blind catching a pair of eights or better? Getting an eight or higher on the first card is a fifty-fifty

chance. Getting a second of the same card out of the remaining fifty-one in the deck is three out of fifty-one. So fifty-fifty of that is three out of a hundred and two. Hmm, a three percent chance. More likely he has two over cards, giving me a small advantage.' "I call," Evan said, flipping over his cards.

Nick looked down at his hand. "That's funny. I really thought you were just trying to steal the blinds. I was joking when I said you had a pair of eights, because I do," he said, flipping his cards over.

Evan stood up from the table, shaking his head. "Come on Seven!" he said clapping his hands, knowing he had only a twenty percent chance at the pot.

Nick's copilot, Randy Nelson, looked up at Evan. "Hey, if you want a seven, you're going to have to deal yourself one."

"Whoops. I forgot I was the dealer." Evan picked up the deck and tossed the top card in with those that were folded by the other players. He picked the next three and flopped them over:

Six, Ten, Seven

Evan exploded, "Yeah!" and quickly reacquired his seat.

While the excitement of catching a set still poured through his veins, he flipped the turn card without paying much attention. Nick calmly let out, "Ah, Straight!"

Evan took a sudden breath and looked down at the nine that was laying on top of the flop cards. Randy leaned over and straightened out the community:

Six, Seven, Nine, Ten

Evan rubbed the deck. "Come on Seven," he said in a less enthusiastic voice.

Peter said, "Actually, all you have to do is pair the board."

Evan brightened up. "That's a lot of outs. Come on, make me a tugboat!" Still holding the deck, he burned the last card and flipped an eight on the river.

Randy looked down at the community straight in disbelief. "Damn, a split pot. That's like kissing your sister."

Evan started splitting the chips. "Depends on what your sister looks like. And if she's anything like you, I'll pass."

Randy spoke up, "Woo, what did Peter say? 'Why you gotta be like that?'"

Evan cut the red deck, passed it to Peter and gathered up the blue cards before shuffling them up for the next round. As the game continued, so did the conversation.

"So Gerard tells me Tom gave up another chance at command," said Nick.

"Yeah, that's right," said Evan, placing a bet.

"Damn, they wouldn't have to ask me twice," said Randy.

"I doubt the State of Connecticut is going to fund another tug. Besides, I think they bit off more than they could chew with the likes of you two," laughed Peter, raising the bet.

"Well, you could always move your mailing address to Virginia," taunted Evan.

"And you'd probably have to switch your commission to the Navy," added Peter.

"Yo, once an Army man, always an Army man!" stated Randy.

"You got that right!" said Nick, throwing in his cards.

"So, what's up with Tom, anyway?" asked Randy, quietly doubling Peter's raise.

"He's hanging over with Gerard at Cal-2. Tell you what, I'll put you guys all in. Make the call and you can ask him yourself after I knock you two out of the game," suggested Evan.

Peter gave a nervous look back and forth, then down at the three hearts in the community. He shook his head and mucked the cards.

"You know, I could go for a beer, but I think I'll hang out here a little while longer. I call. Read 'em and weep, baby!" said Randy, flipping over the nut flush.

"Damn, you got me with a heart attack! Must be your lucky night." conceded Evan, throwing in his two pair.

The six men sat around a table within a four meter wide and two meter long section of tube that joined with sixty-two other sections to make up the crew torus. Hidden



within the disk shaped vessel, this four meter tall doughnut spanned around a hundred and fifty meters. More than enough room for work, sleep, exercise, consumption and recreation. Most importantly, the distance from the center of the spinning vessel gave their eleven second rotation the force to smoothly simulate half of Earth's gravity. As the men coalesce to one side, the water moved away to compensate. With more water coming in from Ceres Station, the flow found its way to an overfilled storage chamber on the far side, exposing a leak in the hatch that had failed to seal. The sounds of the drip around the tube increased in frequency and amplitude.

Randy paused in the middle of the shuffle and grew a strange expression. "What the hell?"

The other five watched him hastily leave, unable to hear the sound of the water fall over that of his mad dash.

Evan looked over at the ship's captain. "Should we see if he needs help?"

Nick calmly replied, "Nah. He'll let us know if there's a problem. Let's finish this hand."

"But it's Randy's play," argued Evan.

"He knows the rules. If you're away from the table during your turn, your hand is mucked," said Nick, throwing in Randy's cards.

"Wow! That's how you treat your chief engineer?"

"Chief Engineer? There's only four of us dude. It's not like we're trekking around in a star ship."

"And if it's something bad, like a hydrogen leak?" asked Evan.

"As I said, he'd give us a shout," reassured Nick.

"DROP THE FREAKING CARDS AND GET YOUR ASSES OVER HERE!" shouted Randy.

"Whoops!" Nick tossed down his cards and jumped to his feet.

The five of them circled around to see Randy standing in a puddle with wet hair.

Nick got there first. "If you're gonna take a shower, you mind doing it in the bathroom?"

"Very funny smart ass. One of the tanks was leaking like a sieve."

Nick looked up the tube and said, "Doesn't seem to be leaking anymore."

"Ya think? It stopped just before you guys got here," said Randy.

"You figure out which tank?" asked Nick.

Evan spoke up, "Don't you have a nose? It's the waste recycle tank."

"Shit!" said Randy, shaking the water out of his hair.

"So, how did you stop it?" asked Nick after taking a couple steps back.

"Simple. By getting your dead weigh asses over to this side of the ship."

"Meaning it's going to start leaking again once we return to the game."

Randy grew an angry expression. "Speaking of which, you don't muck a man's hand for breaking to do his job."

"Damn, you do have good ears. I'm going to have to call you Radar Randy."

"You guys want to call the game?" asked Peter.

“Not if I can help it,” said Randy, climbing the access ladder to one of the inner most chambers.

The door opened to reveal a deep pool of dirty water beneath and a layer of gunk build up on one side of the chamber door.

“Yuk. Hey, stay there guys. I need to grab a tool and a rag,” yelled Randy, down to his poker party below.

Nicked looked up the tube, again. “I guess it’s not your lucky night after all,” he said, laughing.

With his mouth still open and his eyes no longer looking up the tube, the splash Randy made down from the tank hit its mark.

“Blah! I’ll freaking get you for that you bastard,” yelled Nick.

Randy made the motion to make another splash and this time, Nick got out of the way. After a quick laugh, Randy proceeded with his task.

“Sorry for the technical difficulties. We now return to your usually scheduled poker game,” said Randy, taking his seat.

Peter offered, “Here’s your un-mucked cards. Your action.”

Randy took one look and re-mucked the hand.

“Damn, we waited all that time just to have you fold,” Nick protested.

“Only a short bonehead like you would play with those cards,” joked Randy.

Nick smiled. “You’re in a pretty good mood for someone who just got shit on.”

“Nah, it’s mostly shower water. The filters catch most of the crap.”

“Well, I hope you add some more shower water to that tank before we head over for a beer,” added Evan.

“Why? Who’s going to notice?”

They all gave him a crazy look.

## 13. NIGHT CAP

Jill felt nervous over the feelings she was developing. It was such a comfortable and enjoyable conversation with a man she was attracted to, that it scared her. When Tom's friends came in, she used the opportunity to pull Rachael aside to confide in her.

"I need your help," she told her.

"Sure, anything. What is it?" Rachael asked.

"I don't know what to do. I really like this guy. Maybe even love, I don't know. What I do know is that I don't want to mess it up."

"So you're saying you want him to fall for you?"

"Well, yeah, I guess. But mostly I don't want him to think I'm some kind of slut if I sleep with him too quickly."

"You mean like me?"

"No, no. I'm sorry. I didn't mean to make it sound like that. It's just that I never felt this way before. What do I do?"

"Well, even though I don't sleep with most the guys I chase, I do know something about them. And although it is going to ruin the rest of my night, I'll gladly give it up for my best friend."

"Awe, I love you too Rachael. So, what should I do?"

"Not what you are going to do, but what we are going to do."

"Okay?"

"Just watch and play along," Rachael said, seeing the boys returning.

Gerard opened his mouth to speak, but Rachael put a finger across his lips.

"Sorry guys, we gotta head out. It's been a long tow and we have to catch up on some sleep."

Jill looked over at Tom, who heard the news with a face that she could only describe as a sad puppy. She wanted to kiss him right then to turn his lips to a smile, but trusted Rachael and sided with whatever her plan was.

Rachael continued, "We're on Maine-3, if you want to look us up tomorrow or maybe we'll run into you guys here tomorrow night?"

Gerard nodded his head. "Yeah, that's cool. Sweet dreams and we'll see you girls tomorrow," he said, leaning over to kiss Rachael on the cheek.

Jill nervously put up a little wave to Tom and followed her friend out without saying anything more. Whatever the plan was, it didn't feel to her like a good one.

Once they were up the tube and away, Jill asked, "What kind of plan was that? I didn't even get a kiss good-bye."

"Do you want a peck tonight or his arms around you tomorrow?"



“I want both.”

“Well, then you should have gotten closer to him and said good night.”

“You never said that was part of the plan?”

“I said to follow my lead. Instead, you got nervous.”

“Of course I got nervous, because I was nervous. That’s why I asked you for help.”

“Jill, listen to me. If you want a guy to fall, you have to make him chase you, to fight for you. Right now, they are building up an image of us in their mind that no other women can compare to. By tomorrow, we’ll be all they can think of.”

Within the airlock under California-2, Jill extended her arm to touch the icon for the door leading to A-1. Before she could, the door opened to reveal a woman on the other side with similar features and ethnic descent to Rachael.

“Hey Madia, how have you been?” asked Rachael, giving her a hug.

“I’m great. We have to get the violins out and perform some more. The girls on my tug don’t know how to play and it is so boring playing with recorded music.”

“Actually, I have time now. Jill and I are playing hard to get with a couple guys we just met. Totally lied about having to catch up on some sleep.”

“Nice.”

“So you’ll come over and play with me?” asked Rachael.

“Actually, I’d rather take a rain check. There’s this guy I briefly met at dinner and wanted to see if he’s inside,”

Madia said, pointing up towards the entrance to California-2.

“Look at you, the little man chaser. Well, if your guy is a no-show, come back and we’ll slide a couple bows. I’ll probably be hanging out playing Scrabble with the girls, but I can do both at the same time. Music helps me think.”

“Sweet! Maybe, I’ll catch you girls later.”

Tom was sulking in a pint of ale, while Gerard cracked jokes about girls who play hard to get. The attempt failed to cheer him up, but Gerard did catch a change in his expression. He turned to follow the gaze, seeing the olive skinned woman stepping off the ladder and returning his stare. Gerard smiled and looked back to Tom.

“I guess that is one of those signs of affection you were talking about?” asked Tom.

“You could say that. Sorry Tom, I think you’re stuck playing Poker with the boys tonight. And remember what I said; don’t run off looking for that girl or she’ll think you’re too desperate.”

“Don’t worry about me dude. I got my beer in one hand and my date in the other,” Tom said, holding up the pint glass in his right and an empty palm in his left.

Gerard let out a loud laugh and turned to greet the woman before she chickened out and ran off. He realized quickly, she was far from the skittish type.

“Hello beautiful, I’m Madia.”

“You know, that’s only the second time in my life someone has called me beautiful. The first time was earlier this evening by the most spectacular woman.”

“Spectacular? She sounds like quite a catch.”

“I’d say so. What would you say the most spectacular women like to drink?”

“Well, if they have any taste as well, I would say Merlot.”

Gerard nodded and turned to the host to order the drink. Upon receiving the glass, he handed it to Madia and said, “I’m Gerard.”

“It is very nice to meet you, Gerard.”

Tom tossed back his beer, circled around and headed up the tube. The faint smell of Jill’s perfume still lingered in the air. The overwhelming sensation was not what he sought. He wanted a void of sight, touch or sound. A hollow cave where he could consider his thoughts and feelings to figure out why he let her just run off without saying a word.

It was a cave for which he found; a station tube leading away from the center, allowing him to traverse the perimeter of the grid in quiet. He was half way around when he opened the door to gate D-36. His heightened senses once again recognized the fragrance. He looked up, with his heart pounding, to see the call sign listed: Maine-3.

He recalled Gerard’s words for only an instant. They held as much as weight as his body being pulled down by Ceres’ weak gravity. No matter what the consequence, he knew he needed to pull the trigger and ring the bell.

Jill’s face presented before him on the screen with her mouth open in surprise and hesitation.

“I never got to say good night,” was all he needed to say.

“I’ll be right down.”

What followed was the longest and sweetest good night Jill had ever known.

Gerard awoke, feeling the effects of the alcohol that was still being absorbed from the dirty cocktail that remained within his stomach. With consciousness, came the memories of the night prior. What initially appeared to be an elegant and beautiful woman, turned out be a demanding and domineering lover. The absence of feminine softness and vulnerability dissolved his excitement and pleasure. He opened his eyes and looked over to gain at least some pleasure from her delicate form, but her absence provided a more welcome feeling of relief. "Oh, thank God."

He climbed down from the bed to empty one tank and fill another. He drank as much water as his body could take before stumbling back to bed.

Nearby, Jill woke with her suit still on, lying next to the man she spent the night just talking to. She rolled on top resting her head on his naked shoulder. The smell of his body and the feel of his skin broke down her remaining doubts. She unzipped her shirt and pants, slipped them off, taking care not to wake Tom. She returned to her position, running her hand down his chest and belly. When she reached what she desired, Tom pulled in a sudden breath and clenched every muscle in his body.

Rachael started the morning early, keeping to her jog and exercise routine that she would have normally taken a break from during the three day leave at Ceres. She took her time washing up, hoping to share breakfast with her sleepy friend. Disappointed that Jill still wasn't up, Rachael grabbed herself a bowl of cereal and pulled up her book on a small, flat device. Her other crew mates woke with a good morning and went about their own routines.

Rachael flipped through fifty screens over the course of an hour and looked at the clock with a puzzled look. She set the book down, walked over to Jill's door and touched the icon. The chime failed to produce a response. She touched the override and opened the door to confirm the thoughts she didn't completely realize she was feeling.

"Hey Jill, are you still sleeping?" she asked, again without a response.

She pulled herself up a rung and poked her head over the edge of the platform. Somehow, she wasn't too surprised to find it empty.

"She told me she was heading to bed, that little slut," she said jokingly at first, then played into thoughts that Jill could be in trouble.

"Where did he say they were from, Virginia?" she asked herself.

Rachael returned to her chair and brought up the station log on the platform she was reading the book from. There was a Virginia-4 and 7 currently docked at the station. Within her room, she changed her clothes and set out to find her friend.

Gerard stumbled back out of bed, grabbed a shower, a bite and the most important part of his morning routine: a cup of coffee. He leaned back in his chair, pulled up the Enterprise Rock Station he had programmed and enjoyed a song from Cryptodira. The growling rage, loud guitars with sexually rhythmic percussion was soothing to his acquired taste, where for others it might induce suicidal tendencies. As the song reached its climax, Gerard aired the drums, feeling the exploding energy. He wound his arm around to bring it down in time for the beat. Suddenly, the song froze and left him hanging, briefly wondering what interrupted his moment. He angrily answered the chime that followed, "I don't know what schedule you're following, but for us, it's morning."

Rachael moved in front of the camera and said, "Then I guess I should say, good morning Gerard."

"Wow, you girls really did get to bed early last night, didn't you?" Gerard asked.

"Well I did, but I'm not so sure about my friend Jill. Is she there?"

"Jill, here? No, I doubt that. Tom ran off to bed himself shortly after you guys took off."

"So you've seen him this morning?" asked Rachael.

"Actually, no. That is strange, isn't it? Give me a second."

Gerard popped up and ran the icon for Tom's room.

Tom rubbed his eyes and touched the icon that appeared above him. "I thought we were on leave. What's the emergency?"



"I have a worried mom here from Maine looking for her long lost daughter. Is Jill with you?"

"Daughter? Maybe I should remind her that I am her captain," said Jill.

"His words baby, not mine. Oh God, did I just call you that? Maybe I do have a mom complex. Well, I'm just relieved you're safe, though I am a little surprised."

"I surprised myself. Talk more later, maybe over breakfast," said Jill.

"You mean lunch, don't you?"

Jill looked at the time, "Oh God, it's already point four. Okay, lunch it is," she said and closed the link.

"Did she just hang up on me?" Rachael demanded in a sarcastic manner.

"I'd say so. Looks like you're stuck talking with me," said Gerard.

"I would talk to you any day. Sorry I had to run out on you last night. Totally her fault."

"I'm sorry, too," he said, looking over at the laundry generated from the night before. "Of course, there's always today. Why not come up? I make a mean cup of Joe," he finished, tossing the sheets in the wash.

"Don't mind if I do."

With the cat out of the bag, the four of them relaxed and enjoyed the afternoon. The lunch was cured beef with freshly baked bread and some vegetables Tom had been growing in a small garden.

## 14. CERES

Ceres, the Goddess of agriculture, was James' key to reawaken Mars. Not only does it contain a third of all mass in the asteroid belt, which would be helpful in increasing the size and water content of Mars, Ceres would also provide a large enough impact to reactivate the dormant Mars core. Without this, as on Earth, Mars had no magnetic field. The field that was needed to protect life forms from solar radiation. This spinning iron ball within an internal sea of liquid rock had been still for a billion years, allowing most of the atmosphere to be carried away by solar wind.

James remembered the stories of his father about the creation of our moon. As a young man in college, the idea of an impact wired through his brain. "If a large impact can blow off part of a planet to make a moon, a smaller impact must be able to get its core spinning." James had always seen the asteroid belt beyond the orbit of Mars as a threat to Earth. Slowly, he realized it provided all the mass and energy he needed. It wasn't hard to pick out the largest rock and see it crashing into red planet to achieve his dream.

The trick was to figure out how to change its orbit. Ceres was more than a city sized rock, which otherwise could be pulled off orbit by a solar sail, nuclear thrust engine, or the latest ion propulsion system. No, this dwarf planet was a hundred kilometer diameter sphere with enough surface area to cover most of Europe. Ceres was indeed larger than anything that seemed possible to move. But those determined enough to find solution, often do. James received a good number of laughs when he first started his presentation, but his audience quickly began to realize it was possible.

Gravitational slingshot was a useful tool in carrying probes to the outer solar system. A simple flyby can increase the speed of a ship by twice that of the planet. And with the help of a computer to direct your distance and direction in a close pass, you can steer all that momentum anywhere.

The Voyager missions of 1977 took advantage of a planetary alignment to make it possible to visit all four gas giants. Tom Paine, a NASA administrator at the time said, “the last time that [alignment] happened was when Thomas Jefferson was President, and he blew it.” The images returned from Voyager showed not only a vibrant diversity in the planetary characteristics, but also in their moons. Nothing like the dead rock NASA astronauts came to discover about our moon. Instead, the mission revealed a volcanically active Io, an ice covered Europa, a Titan shrouded by a thick methane atmosphere and a Triton with nitrogen geysers spewing up as much as ten kilometers.

For Voyager, the gravitational slingshot effect made it all possible. And as with all forces, there is an equal and opposite force pushing back; or pulling back as the case may be. When Voyager One was being pulled faster by Jupiter, it was, ever so slightly, slowing Jupiter down. James realized the same effect would make it possible to slow down Ceres.

It would have taken ten thousand years for one tug to pull enough objects past Ceres to slow its orbit enough to fall to Mars, but a thousand tugs could do it in just ten. The trick was getting them produced and manned.

Private companies design products and other companies design the factory and production methods needed for their manufacture. This allows them to keep their designs and methods secret. The sale of the tugs and the licensing of the patents could have made James a billionaire. But he was interested in more than money. James envisioned a world without secrets. A world where people worked together, openly. Where a globally designed product could be manufactured in any country, not just China. Where the manufacturing methods are part of the global design.

In 1983, a software developer named Richard Stallman started a project called GNU. "GNU's Not Unix" set in motion a collection of openly developed software programs, from a Unix like operating system to a set of free development tools for all to use and contribute to. This type of Open Source development quickly grew in force and eventually took over the lead from industrial designed computing systems.

James saw Open Source as a means to unify the world in development and production of his dream to terraform Mars. And with global unemployment near twenty percent, this would provide not only jobs, but also the methods for teaching them to manufacture pretty much anything.

The first step is often the hardest. If he posted his idea and designs before a system for protecting them was set up, an existing company could run with an offshoot of his specifications and patent them before he had a chance to prove the technology. He had learned this in college after posting a new idea for a pulse detonation engine. So, an older and wiser James knew the first step was to hire a team of patent lawyers who understood the legal implications of Open Source development. The next was to recruit the best engineers to produce working prototypes of the tug designs and to oversee the enhancements from the global Open Source community.

With the prototypes working and the patent applications submitted, James initiated the presentation stage of his dream. 'Who do I start with?' James asked himself. 'If I go to the space agency, they will request ownership of the project and add a layer of bureaucracy that will grind things down to a snail's pace.' James conceded that he would not live long enough to see a blue-skied Mars, but he wanted to see it well underway.

He already knew he would be presenting this idea in science and engineering forums throughout the world, but needed to provide proof that the project was real. It would require support from the government to get off the ground

and from other nations to come to fruition. He might be able to pull some strings with associates to get a few minutes with the President, but she was not likely to grasp the scope and feasibility of the project in such a short presentation. No, he needed to go to the President's science advisory team.

Even they thought he was crazy, but gave him the full half hour due to their interest in the subject. By the end of the presentation, James could see the motors running in their heads in a failed effort to find why it wouldn't work. A week later, he got a call from the President to repeat the presentation. Even with her full attention, James thought it would take a miracle for her to see past her lifetime and presidency on a long-shot project that would cost the nation billions.

"You know, now is not the time to spend money we don't have on some fruitless project. There are a lot of people out of work in our country and despair throughout the world."

James switched gears and started, "I understand that Madam President, but --"

The President put up her index finger and James quickly halted his argument. "Let me finish. Even after all our efforts, the world continues to be divided by petty bickering and blame. What we need is a fruitful project that can bring in new jobs and provide a sense of hope throughout the world. I can tell you are convinced this project will work and you seem to have convinced my advisers. I, for one, cannot see how it could be possible."

James' expression clearly showed the draining effects of the statement on his own sense of hope. The President

waited for the expression and rewarded James for not interrupting the completion of her statement: “However, I am not a scientist. I am a politician. But I know that even if you don’t magically transform Mars to support human and animal life, the hope of such an amazing goal will spread like wildfire throughout the world for even the chance of such an achievement.” James’ face lit up with each word, and with her final, “You have my support,” tears burst from his eyes like the day his first child was born.



## 15. MANHATTAN

James woke with a rush, still feeling the high from last night's interview. A man defines himself on what he believes and builds confidence when he has the chance to explain just what those beliefs are. The larger the audience, the greater the rush.

By lunchtime; however, the volume of calls and communiqués overwhelmed his attempts at maintaining a simple family life. With his teenage boys home from high school and his wife looking to give him various occupations, he put down his headset and choose an errand that would provide him a few moments of solitude, hidden amongst a city of ten million.

James gave the weather a smile as he stepped out of his apartment building. The weekday inhabitants that covered the roads and walks were not what most would consider typical, but the diversity of shapes, colors and clothes was nothing new to James or anyone who would call themselves a true New Yorker. Pausing to watch a blue haired woman with equally blue eyes walk by, James let his

eyes drift away from the flirt and instead caught a return glance from a man across Amsterdam Avenue: A seemingly normal chap with jeans and a black hoodie. The scruff that covered part of his naturally tanned face was blocked by the pad he held in front of him. Occupying himself with an afternoon read and coffee, the young man blended well into the back drop of a living city.

With his head clear, the strength the interview had provided made its return. James turned and let the blue haired girl guide him to the corner. Across the road, the young scruffy man gained his feet and briskly set off in the direction of James and the admired woman.

“Excuse me sir, you forgot your coffee!” James faintly heard the shout from across the street and looked back to see the young man angrily smacking it out of the hand that offered it kindly.

James couldn’t hear the curse that was replied, but shook his head from recognizing the gesture.

“New Yorkers sure come in all types,” James remarked to himself and turned the corner.

The young man looked back around but failed to find James on the other side. He did a quick survey, but only found the blue haired girl without her tail. Hastily, he jumped between two cars to cross Amsterdam for a look down 83rd. A horn blared, causing the man to jump back from the cab that nearly clipped his hip. He brushed off the near miss and finished crossing as other cars sped by. At the corner, he paused and peeked around to see several people on the street, but not James. He looked down at the

device that confirmed his own location on the map, but it offered no blip to indicate a course towards his target.

James walked up and down the aisles, but could not find his wife's favorite Chianti. He headed back to the counter to see someone whom he didn't think was old enough to sell their product, let alone drink it. "Are you guys out of the Ruffino?"

"I don't know," the kid replied with a blank stare.

James nodded in acceptance of the ignorance and turned to leave.

"My dad will be back in an hour. He would know."

"Oh, okay. Thanks."

Outside, James held the door for a young, scruffy man in a black hoodie who was attempting a peek through the glass. The man hesitated for a moment, but walked away as a woman came up to enter the store. Making the turn, James went off in search of another liquor store.

It was warm for a February, but the sun was fading fast. After what had been a brutal couple months, James was starting to believe that the ground hog might have been right a few weeks back. 'Maybe it will be an early spring,' he thought to himself. Whistling, he made his way down Broadway.

Somewhere between the Earth and Sun lies a point in space where the pull from both bodies cancel each other out. This location, named Lagrange-1, became the home of a large collection of interconnected lenses that could be controlled to reduce the amount of light and heat the

Earth receives from the Sun by a few percent. NASA's most recent achievement became their most important for the planet. With a simple redirection of the Sun's energy, the issue of global climate change was resolved.

James had followed the creation and implementation of the devices, but what he didn't know, is that he wasn't the only one hoping for an early spring. The senior staff of the Climate Control Project in Florida decided to take the ground hog's advice and flatten out the seasons. What better time to start than on the peak travel period to their state for presidents' week. The Northeastern ski resorts were not as amused.

Back in Manhattan, the young, scruffy man looked around to see James heading towards Broadway. He hid a moment to avoid detection, then popped back out and over towards the intersection. Without the sight of his target anywhere, he cursed under his breath. He looked back around to recall the store James had come from empty handed: "Al's Wine and Liquor," he echoed.

Addressing the device, he spoke "Liquor Store". With several presented on the map before him, he made his way to the first.

James placed his card on top, heard the beep and collected the bottle of Italian wine on the counter. His electronic currency card broadcast a partly encrypted copy of the transaction for any neighboring cards to capture and echo along to an internet hub. What doesn't get encrypted is the public transaction header, including part of an ID

that could inadvertently be used to identify the user. The wireless echo bounced around and beyond the intersection of Amsterdam and 79th. A couple of blocks over, a young man continued his search with the device in hand. The program within was written to illegally track transaction echoes back to their source. With the acquired public ID input, each new transaction packet came in and was quickly discarded, until the numbers matched.

The pad's vibration caused the man to halt his visual survey of the streets. Glancing down, he got his bearings and broke into a run towards the blip. With the sun now set, he pushed himself to close the distance fast before James left the location of his purchase.

As James exited the store, something familiar yet strange caught the corner of his eyes just before he completed the turn to walk back home. The image looped in his head, recalling the man he had seen twice during his hour long walk. Seeing this man before was not what bothered him. What triggered the alarm in his head was that the man suddenly slowed from a run once eye contact was made.

Wanting to dismiss his concerns, he tried to use the glass of the parked cars as a mirror back. With the limited light, it wasn't until the third car that he saw the man crossing the street directly towards him and gaining ground. James drew the currency card from his pocket, punched in the panic code (the same that could be used to mark a transaction as being coerced by force) and placed his thumb on the sensor as he slid it back into his pocket. Holding his course, James played strategies in his head.

‘Never an officer around when you need one,’ he thought. ‘Of course, this young bastard would probably out run a city cop and be back later to finish the job. Back later? This scum bag knows where I live; where my family lives!’

The thought triggered an anger that James was not accustomed to. It reminded him of the third grade, when he was pushed into a fight by the school bully, only to find himself standing over the beaten boy. He didn’t know how he did it; just that he had gotten mad. Back then, he had looked at the empty hands he had used as weapons. Now, he noticed the paper bag with a bottle of wine within. Looking ahead, he saw a small alleyway that divided two buildings.

The man rounded the corner and ran West on 79th. The street lights revealed the face of James as he exited the store. Quickly, the man slowed to a walk and crossed over to follow behind. He looked back to see only one other person within visual range. “Now or never,” he convinced himself, increasing his pace.

The pad, now in his pocket, buzzed once more. He ignored the device and bore closer to his target: Twenty meters; fifteen; ten. Suddenly, James turned down a small alley and was out of view. The man paused to smile at the added seclusion and then hastened towards the turn. He withdrew the knife and rounded the corner. The way was seemingly quiet and empty.

The man cautiously entered, holding his knife ready, listening for any sound of movement. Over the breath of the city, he heard a small crinkle of paper. He smiled and focused his attention to a small darkened doorway ahead.

He rolled his feet to mask the steps he took to advance upon the location. The broken glass within a dark puddle below his foot caused him to halt once more, looking down to see what caused the sound it clearly made. The realization that he was heard made him lunge towards the doorway, with the knife providing the lead.

James rounded the corner and broke into a run. He had already loosened the bag and now had the bottle in hand. The wrought iron fence worked well as a bottle opener with the wine quickly exiting out of the broken bottom. James discarded the bag and ducked into a doorway, with the bottleneck in hand. A moment later he heard the man enter the alleyway, but then after, could only hear the sound of his own deep breaths. The classes he took so many years back gave him control of his respiration. They were designed to provide his wife-at-the-time control of her pain during childbirth, but James found the Lamaze method worked well for meditation.

The paper bag floated across the alley from the faint breeze. James watched it circle around and lightly brush into the corner of the doorway. The slight sound it made was replaced by another. James peeked around to see the man quickly moving towards the doorway across from him.

The knife met nothing but empty space within the dark doorway. Before the man could turn, James thrust a kick to his back that launched him into the door. The man quickly recovered and swung his blade around. James jumped back in time, but the distance gave the man the



time to turn and prepare a better strike. The knife came sideways towards James' head at blinding speed. James ducked and raised the bottle in an attempt to deflect the strike over. Instead, the knife entered the bottom of the bottle, causing it to fracture apart up to its neck. James saw that he was left with only this and the cork within, while moving his gaze towards the knife that flew away from the hand of his assailant.

James recoiled from the strike and countered with his own. The man was clenching his wrist as blood dripped from the wound. Moving both hands together, the man blocked James' right handed punch, stepped in and hit James with an elbow strike. James fell back but managed to stay on his feet until the man's foot connected with his chest. Hitting the far wall, James crumbled to the ground.

As the man continued to hold his wrist, he looked over and regained the knife. This gave James enough time to recover to his feet and find the lid of an old fashion trash can. Holding the middle handle with his right and the rim with his left, James was able to ward off two slashing strikes. As the third came, he switched to an offensive posture, aiming the far rim towards the man's wounded wrist.

The man let out a scream and dropped the knife once again. With another swing of the lid, James pushed the man's arm to the side to open a shot to his head. The impact made a loud clank and sent the man sprawling backwards. With blood still flowing from his wrist, the man picked up the paper bag, wrapped it around tightly and covered it with his sleeve.

James grabbed the knife and moved the makeshift shield to his left.

“Geet? I don’t suppose we could discuss this over a couple steaks?” James offered.

“Perhaps they will serve steak at your funeral,” the man said as he approached.

James held his ground, being more concerned with the man’s accent than his physical threat.

“You’re Afghani? Why do you focus your anger on me?”

The man answered by feinting a low kick. James moved the shield down to block, but the movement was made to plant the foot for the other leg to swing high. The kick caught the side of James’ head and sent him tumbling to the ground.

As the man leaned down to regain the fallen knife, James managed a thrusting kick that sent the other back, but not down. He raised his knife once more and advanced on James.

“Freeze!” shouted a policeman near the entrance of the alleyway; aiming his gun at the man.

The man stopped and looked over at the officer before looking back at James, who lay in a defensive position with his legs and shield at the ready.

“Drop the knife, now!” screamed the officer.

The man lowered the weapon, but kept its grasp. He turned to the officer, who was clearly out of his blade’s range and then over towards the wrought iron fence. The hundred year old bars were about a meter tall with spear like tips to discourage anyone from climbing over.

"Drop the knife!" repeated the officer.

This time, the man complied with the request. As the officer reached for an electronic web, the man turned and leaped towards the fence. With outstretched arms, the dive fell short of the small porch beyond, sinking the sharp tips of the fence into his chest.

James sat there stunned as the officer talked on the radio next to the dead form of the man.

"Are you okay Mr. Kennedy?" James heard the officer ask.

"Yes, I'm fine, thanks," James said, getting up. "I need to go check on my family."

"I understand. I'll send a unit over for protection and to take your statement. I'm confused though. Why would he kill himself?"

"Probably to hide the person he's working for. The man was from Afghanistan. I'm going to have to talk to the feds about this. Tell you one thing, my wife isn't going to be very happy if we have to move, again. I better go. Thanks again for your help."

As James entered the apartment, he was confronted again, this time by his wife.

"It's about time! All I ask is a bottle of wine for dinner and now it's cold. What!? Where's the wine?" she stood with her hands on her hips.

"The wine? Sorry dear, I dropped the bottle on the way home. How about we all go out to eat, instead?"

## 16. A NIGHT OUT

Madia gave a knock at Maine-3. Jill's pod pilot, Heather, answered the video call and recognized Rachael's friend down in the airlock below the tug.

"Sorry, Rachael's out with Jill tonight. Think they are over at A-2 with a couple guys from Virginia-7."

Madia was surprised, recalling the tug she spent the night before, but was adept in keeping her emotions from showing. "Oh, okay. Just tell her I stopped by."

"Will do. Have a nice –" said Heather, but was cut off by the severed connection.

Heather leaned back in her chair, shaking her head. "That woman is such a bitch."

California-2 was low lit, with extra lounge sections added in to replace the redundant crew cabins and command consoles. Madia heard conversations and music as she climbed down the ladder and stepped into the crowd.

She gave a quick look, failing to find what she sought. Circling to the left, men gazed at her dark hair and form, attempting to gain a look back from her equally dark eyes.

She ignored their gestures of interest and continued her quest as if they didn't exist.

The end of level 9A was terminated by an air filled bladder that sealed it from 9C. The crowd that conversed in front of the retractable barrier contained only the faces of strangers. As she turned back, she found her way blocked by a man. Being unamused by his feeble attempt to experience the feel of her (as she would put it) perfect flesh, she simply looked him in the eyes and said, "Out of my way!"

Surprised by the bluntness and assertion of her command, he quickly pushed his way to the side to clear a path without saying a word.

Passing the bar a second time without acquiring a drink, she made her way to the right side of the tube section. She paused for only a moment, to see the four of them laughing and smiling at what she felt was her expense. Gerard saw her approach and coughed up the part of his drink that found its way down the wrong passage during the moment of his distraction. Rachael slid her arm up from the waist of her newly acquired man to attend to his distress by lightly patting his back.

"Are you okay, baby?" Rachael asked before looking up to see her friend. "Hey Madia!" she said, getting up to greet her.

Madia put on a false smile that fooled her and decided to have a little fun herself.

Rachael sat back down and motioned to Madia to grab a seat. "Hey guys, this is my friend Madia from Afghanistan-4. This is Tom and Gerard," she said, giving the latter a one armed hug.

Gerard opened his mouth to speak, but Madia didn't want him to ruin her fun. "Nice to meet you Tom, Gerard," she said, lightly shaking both of their hands.

While Gerard and Tom shot each other a look, Rachael asked her a question, "So Madia, did you find that man you were chasing last night?"

Gerard cringed, but Rachael was too caught up in her query to notice.

"Sure did. A large, handsome man with a muscular physique. But what he makes up for on appearance, he loses on style and energy. I was led to anticipate a bull ride, but he felt more like a donkey."

"Oh my God, I'm sorry," Rachael said on her behalf even while being surprised by the bluntness of her vulgarity.

Gerard spoke under his breath, "A donkey?" And bit his tongue after letting the protest escape.

Tom heard the comment and decided to poke fun while pulling attention from his friend. "Yeah, he sounds like a real jack-ass."

Jill, who was registering the expressions, was thrown off by the racy comment made in front of men this woman shouldn't know. When she heard Gerard's quiet remark, only part of her began to recognize the identity of the mystery man.

Gerard recovered and brushed off the comment by adding another, "Even worse, he could be a democrat."

Rachael wasn't amused. "Cut it out guys. She put herself out there and got hurt."

Jill, who didn't believe this, decided to clarify. "You okay? Was he mean to you?"

"About as mean as a lamb? What I need is a lion. There are so few women here, that all the men walk on glass around us."

Tom asked, "I never got that. Why are women attracted to bad guys?"

"We just are," Madia answered as if she was speaking for the other women.

"But why?" he repeated the question.

"Why are you attracted to Jill?"

"Because she's beautiful and I like talking to her."

Jill perked up from the comment, even as Madia continued to control the conversation. "What makes her beautiful?"

"I guess I could describe the shape of her face, hair and body, but it really comes down to that I just like the way she looks."

"Well, I just like strong, dominant men. Someone who would step on anyone who gets in his way."

Jill broke in. "I doubt you'll find anyone like that here. We are all members of a collective effort and are not here for personal gain."

Rachael caught a glimpse of regret in her eye and said, "I'm with Jill. You just need to give this guy hints about what you want. Push him in a corner and pick a fight with him. I'll bet he'll fight back a little if you push the right buttons. Go ahead, give him another chance."

"You think so?" smiled Madia.



“Yeah, but don’t take my word for it. Ask the guys,” Rachael suggested, with Gerard becoming increasingly uncomfortable.

Madia was truly enjoying herself now. She looked over into Gerard’s eyes and posed the question, “Do you agree with your girlfriend? Should I give this guy another chance and train him to be more forceful with me?”

Gerard looked down and took a breath to contemplate his response. Once he knew what to say, he looked back up. “A man is a man and needs to be who he is, else he can’t be anything to anyone. I think there are enough other men here that you will find one who wants an aggressive relationship. I don’t know any men like that myself, but I’m sure you’ll find one if you do what Rachael suggests. Pick a fight with enough of them and one will eventually fight back.”

It wasn’t the response that Madia wanted to hear, but she nodded and accepted the truth in the statement. To Madia, the conversation had lost its thrill and the loss of its control made her angry. She looked back around the tube, thinking of the man she had rejected a few minutes before. What she needed was a pin cushion. Someone to lay into to displace her feelings. But what she really wanted was someone strong enough to punch back and take away her need for control. She put on a false smile as she was trained to do and expressed her excuse for escape: “Well, let’s put it to the test,” she said, got up and walked back into the crowd.

Gerard caught Jill staring at him with curious look. He controlled his instinct to dart his eyes away and instead slowly smiled and looked back towards Rachael.

Tom finished the conversation with, "I'd hate to be the guy she decides picks a fight with."

## 17. PROJECT POSTING

In 1991, a message was posted to an internet news group:

From: torvalds@klaava.Helsinki.FI (Linus Benedict Torvalds)

Newsgroups: comp.os.minix

Subject: What would you like to see most in minix?

Summary: small poll for my new operating system

Message-ID: <1991Aug25.205708.9541@klaava.Helsinki.FI>

Date: 25 Aug 91 20:57:08 GMT

Organization: University of Helsinki

Hello everybody out there using minix - I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat (same physical layout of the file-system (due to practical reasons) among other things). I've currently ported bash(1.08) and gcc(1.40), and things

seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)

Linus (torvalds@kruuna.helsinki.fi)

PS. Yes - it's free of any minix code, and it has a multi-threaded fs. It is NOT protable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-).

From this, Linux was born, and forty years later became the basis for the world's most widely used computer operating system. With the backing of the President and a growing interest of leaders throughout the world, James' post to the engineering community drew a little more initial attention. He hoped it would be even more instrumental.

From: james\_kennedy@marsterraform.gov

Subject: Global Project to Terraform Mars

Date: 2043-3-8.185326

I have started an open source project to terraform Mars with the backing of the U.S. Government and an increasing number of nations throughout the world. The idea is simple and sound, but the technology and scope is beyond anything humanity has undertaken before. It can only succeed with your help and those from the engineering community throughout the world.

The project requires the design and production of space tugs. Operators, hired from the supporting

countries, will work collectively with a station to be created on the dwarf planet Ceres (in the asteroid belt between the orbits of Mars and Jupiter) to change its orbit and impact Mars in 2057. The tugs will not pull directly on Ceres, but will drag smaller asteroids in the belt to whip them around Ceres and into Mars. Using the gravitational slingshot effect, each asteroid will gain energy from Ceres while inversely reducing Ceres' orbital energy. Each pass will pull it closer to the orbit of Mars. The impact of Ceres and the other asteroids into Mars will draw it closer to the Sun and reactivate its dormant, magnetic field generating core. Once the dust settles, the thick, hydrogen and carbon dioxide atmosphere will be ready for vegetation. After another eighty years, the oxygenated world should be ready for human and animal life.

An initial tug design, its systems and production methods are available via [marsterraform.gov](http://marsterraform.gov).

Several technical obstacles need to be solved, including: a compact, water-base, fusion reactor; propulsion; artificial gravity; asteroid mount; tracking systems and the means to get this all up to orbit.

You can be part of this global endeavor. A human effort greater than the pyramids, higher than the Moon, truer than religion. Start today. The clock is running.

James Kennedy  
Founder and CEO  
Mars Terraform Project

Designs came in from all corners of the planet. Engineers, unfamiliar with the process, sent CAD drawings of every shape and size directly via email. Each of these was automatically echoed back with a rejection letter and a link to the process instructions.

Those who followed the plan, could check out any of a number of tug designs, request approval for a modification to be included or post a completely new ship. This simple tree of a dozen design branches quickly turned into a forest. James' full-time engineering staff found themselves full-time managers of a process that was victim to its own success.

With thousands of ship designs and each alteration requiring an approval from a staff engineer before the modification could be saved, change requests grew exponentially. To counteract the grid lock, a staff engineer named Shankar, introduced a voting system for any open source engineer to mark his/her ten favorite designs. The approval for modifications to less popular tugs (those not in the top twenty) was directed to the publisher of the design, instead of the staff engineers. This made those who created the design happy to be in more control of their concept and give them another goal to reach for.

The technology grew from NASA experience, the aircraft industry, energy companies, universities, down to those still in grade school. Years back as a senior in High School, Jill Brand spent every free moment sticking her head into the virtual world of rotating space ships. Like Shankar, she found the process cumbersome. Each ship had different layouts, causing her to redo work for each tug

that she felt might be the one to be chosen. To expedite the process, she made a very generic design of a tug vessel with redundant and interchangeable parts. Using this as a test-bed, she was able to more quickly modify her designs and work them into the ever changing top twenty.

During the monthly forum, James and his staff announced progress and answered questions from the project certified engineers around the world. Jill was terrified to offer any input to these meetings, but found herself compelled after hearing the same complaints about work redundancy. Without thinking, she hit the transmit request and heard her name being announced. After a couple second pause and a small panic attack, she heard her name echoed again, this time by James.

“Yes, I’m here. Sorry. This is the first time I hit that and wasn’t quite ready.”

James’ voice was somehow soothing, like her father had been before his passing, two years back. “That’s quite understandable Jill. Did you also have a complaint with the process?”

“Well, more of a solution, actually. Instead of building CAD structures from scratch to work into the designs of each individual ship, I created a more generically designed ship that would allow me to grow my proposals and make smaller adjustments to fit each of these vessels. I have this saved on my system as an unpublished ship design, but can send it to others if they would like to build on their concepts from its mold.”

James replied, “Sounds like you should just publish your ship as a completely new design and allow others to



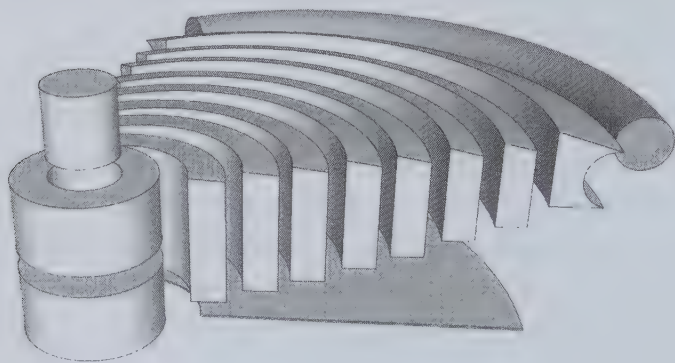
access it through the existing revision process. I'd rather not have your ship turn into a hundred different ships outside the system."

"Oh, okay. It's just that it's not a complete ship and is overly simple."

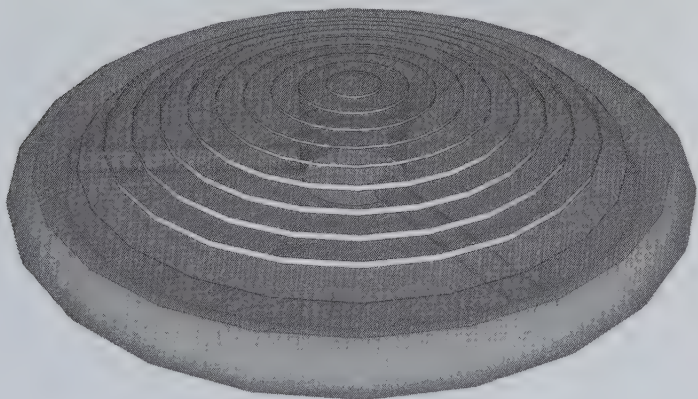
"The best designs usually are my dear. Please check it into the system. I'm curious to have a look, as I have been following all your modifications."

To Jill, the voice was still soothing, but the words brought on another chemical surge of nervousness. "Okay, I will. That's all I guess," she completed and was happy to regain her status in the meeting as a spectator.

Jill finished the rough version of her tug. It had a central bay, fusion reactor ring, asteroid ribbon reel, surrounded by water chambers and crew torus, each divided into three duplicate sections. The parts were held together by magnetic clamps and covered with a thick thermo and impact barrier:

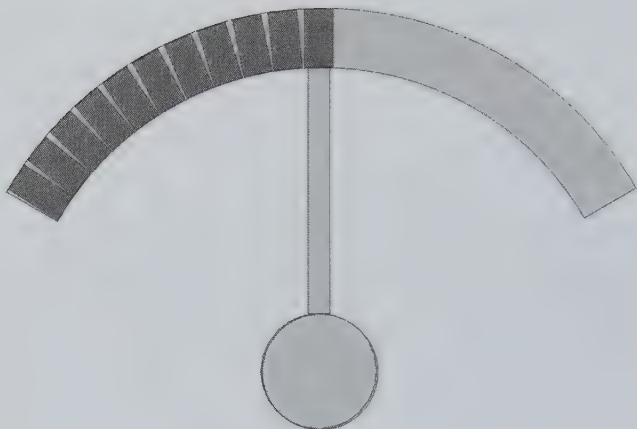


With all the parts from the three sets of sections pulled together, the twenty-five meter radius disk covers about a half acre:



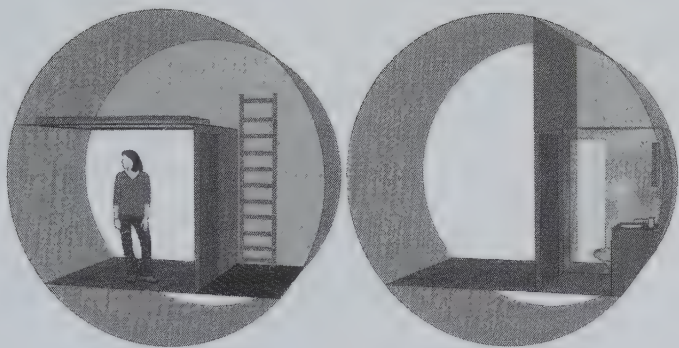
Jill ignored the details of the engine, propulsion, and plumbing, along with a hundred other systems on the ship. Her focus was the crew torus. The Mars crew had a flat ring, so anytime the engines were engaged, artificial gravity was counteracted by thrust. During these spells, the crew was confined to their chairs, trying to hold down any meal they might have had the misfortune of too recently consuming.

As with many designs, Jill's crew torus was circular. But where the others had fixed stations and rooms, Jill's tube was clean and could be filled with any arrangement of two meter wide platform sections:



This made it easy for Jill to provide details to the living sections of the tugs without worrying about how many bedrooms, bathrooms, cooking and command stations might be needed and how they would be connected together. The true genius was in allowing thrust and spin to be completely blended together without impact to the section layout. With the three sections combine into a single, circular tube, the crew torus contained room for sixty of these interchangeable stations. Each of them linked together to provide one flat and level walk around the perimeter of the vessel, no matter the thrust and gravitational forces.

The ship was exceedingly simple. Even her default bedroom and bathroom sections lacked anything but the bare essentials:



She woke up early on Saturday to finish the details and didn't check in the tug design until 3:00am that night. By the time she got up the next morning at ten, there were a dozen pardon requests for enhancements made to her tug. Four provided details for the engines and thrust, three to the pod bay, two to the ribbon reel, another two to access tubes and one for a generic plumbing system under each section.

What surprised her more was that her tug had a ranking of ninety-seven and even clicked down a few levels as she looked over the change requests. By the time she was done late Sunday, she had a ranking of twenty-five. This was somewhat bitter-sweet, because the next day put her design into the top ten while removing her control over the approval of enhancements.

Within a week, the most beautiful and elaborate design that had held the top spot for so many months wobbled off its pedestal; so quickly replaced by a plain looking disk with simple parts that could be swapped or replaced in space.

## 18. SWAP

“We can’t do that,” said Evan.

Gerard replied, “Why not? We’re all going to be here again in a month, anyway. We can swap back after the next set of rocks. No one else need ever know.”

Evan looked uneasy. “Even if we can hide this from command, are you sure the other two women are okay with the swap? Maybe we should meet them –”

Gerard cut him off. “No! It’s better this way. It’ll give them all the time they need to just talk with you guys. If you meet before, they will feel pressured to make a hasty decision about the two of you.”

Evan switched to another concern. “Yeah, but what do they look like?”

Tom responded, “Dude, we didn’t even meet them. But if they look anything like their shipmates, they’re hot.”

Evan nodded. “Okay, but what do I say to them? It’s been a while and I don’t want to blow this.”

Gerard was happy to provide advice for something that seemed to come easy to him. “Man, just talk about what you want to talk about and wait for her to show an

interest. Just be yourself and let her accept you for who you are or not. No consequence. Either she likes you or she doesn't. But don't make a pass until she gives you a sign. If you do, she'll either put up her guard or think you're not confident enough."

"What kind of sign?"

Gerard smiled. "The easiest way a girl will say she likes you is by touching you on the arm, brushing up against you or something like that. I don't know, but either way, you will when she does."

Evan still looked uncertain. "I still don't know. How do I even start a conversation with one without her thinking it's a pass?"

"Just don't stand there with your mouth open and you'll be fine. Remember, sometimes less is more. Have something to do, stop, look at her, say what you want to say, give her a moment to respond, then go back to what you were doing. Make her continue the conversation."

Evan could already feel his blood raging at the prospect, but he had learned to control such things before. It was like being dealt a couple aces in Texas Hold'em. Evan felt his confidence build and he looked Gerard in the eyes as he nodded. "Okay, let's do this."

Tom looked over at the other, as of yet, silent crew mate. "Peter?"

He calmly replied, "Sure! No consequence, right?"

Gerard pointed at him, nodding.

Tom smiled and established a link with Jill.

She returned the smile. "So, it's a go?" she asked.

“As long as you can convince your pod crew to swap for a mission,” said Tom.

“Heather and Linda won’t mind. You know us girls like a change every now and then,” said Jill.

Tom half adjusted to a more serious expression, “So, you’re saying you’re going to get sick of me?”

Jill admitted, “Oh no, not you. I left an hour ago and I already miss you. Is that crazy?”

Tom nodded. “Totally. But I’m glad you said it. Well, the sooner you get to work on your pod crew, the sooner we’ll be over there.”

“Okay, see you soon.” Jill smiled and disconnected before finding Rachael to help her with a battle plan.

“You’re kicking us out?” asked Heather.

“Not at all, we’re just asking for a month long favor,” replied Rachael.

“Then I don’t want to go,” Heather said with her hands on her hips.

“Oh, please, please, please. I’ll do anything,” pleaded Rachael.

Linda looked over at Heather and echoed, “Anything?”

Jill just shook her head in disgust.

Maine-3 was identical in every way to their vessel, but somehow it looked completely different. Where Virginia-7 was void of decor and clutter, Jill’s ship was filled with what the guys could only describe as a woman’s touch.



Fortunately, they knew better than to criticize someone in their home.

“It’s nice, but how the heck did you get a rug up here?” asked Tom, placing his skateboard aside.

“Oh, I pulled some strings,” Jill said smiling.

Gerard came down from the tube and grabbed Rachael. “Let’s take off before your friends change their mind. And believe me, they will. Evan might be a good pilot, but he’s all thumbs when it comes to women.”

Rachael chuckled, “Yeah, Jill. You and Tom handle take-off while Gerard and I secure in for zero-g.”

Jill shook her head and said, “Space rabbits.”

Tom jumped in the co-pilot seat saying, “I hate to tell you, but I’m not too sure I know how to drive this thing.”

Jill looked a little confused. “You’re here. You must have completed the pilot course.”

Tom admitted, “Sure, but it’s about as exciting as driving a submarine.”

Jill spoke, sounding eager to teach him, “Well then, I think it’s time you learned, don’t you?”

Tom put on a fake serious voice, “Yes, Ma’am!”

Jill glared at Tom. “Ahhh, you did not just call me ma’am.”

Tom smiled at her, “Sure I did, but I meant it in a loving way.”

Jill relaxed her own false tone. “Careful, that’s two four letter words in two sentences.”

Tom quickly replied, “What, love? Are you saying differently today?”

Jill blushed and retraced her words from the prior day. "I never said I loved you."

Tom smiled. "You didn't have to say it."

Jill didn't know if she should fight back a little or jump out of her seat and kiss him. However, since she had already started the undocking procedure: "You think I could love a man who doesn't even know how to pilot a space tug?"

Tom nodded. "Fair enough. Do you care to walk me through it?"

Jill tilted her head a little sideways. "I might be so inclined, if you promise to be nice to me."

Tom made a large smile. "I promise to be very nice to you."

With that, Jill happily guided Tom and set course for a slow reverse orbit from Ceres before unbuckling to collect her fee.

Heather and Linda made it over to Virginia-7, each with a couple large duffel bags. Evan tried to appear occupied at his station, but outwardly looked surprised by the amount of stuff they brought for the trip. He got up to assist, but Peter cut him off.

"Hey, I'm Peter, this is Evan. Damn, we should have come over to help you guys with your bags." He reached down and grabbed the two which lay on the floor. "Let me show you around to your quarters."

Linda said, "Thanks!" and followed along.

Heather stopped to look back at Evan. He gave a smile and a low wave before turning back around to his

station. Even though he tried not to, Evan looked back to watch Heather turn to leave. He lowered his head, quietly cursing to himself, ‘Damn, that went well. Didn’t even get a chance to say anything. What a freaking idiot.’ After stopping to settle down and think, he echoed what Gerard said: “Sometimes less is more? God, I hope you’re right man.”

Heather caught up as they reached the vacant cabin pair. Each tug had a crew of four, but was set up to house twelve. Not only for potential crew transfers or rescue, but also as another means of redundancy. Even if two of the three sections of the torus tube were breached, the remaining section could still be used to carry a complete crew to safety.

The doors slid open by command and revealed two identical rooms. Between the two bedroom stations stood a bathroom station. Heather put her bag down in her room and touched the access icon to the bathroom. She was pleased to see the shower was in the same new condition as the rooms.

Peter offered, “These cabins and the next pair over haven’t been used. I figured you two would like to room next to each other, but you’re more than welcome to split up if you want private bathrooms.”

The women looked at each other shaking their heads, “No, that’s okay,” said Linda.

“Cool, then I’ll let you two get settled in. Once you’re done, we can all catch a bite together before heading up.”

Heather popped her head out of her room. "Actually, I'm not too hungry and would rather settle in with a book. You guys go ahead without me."

Linda got a little cross. "Heather, you're going to make me eat dinner with two strange men?"

Peter quickly seized the opportunity. "I'm sure Evan wouldn't mind if you would rather just the two of us eat together."

Linda knew the answer, but still wanted to ask, "You mean us as in you and Evan?"

Peter smiled and said, "No silly. I meant us as in you and me. Of course, if you would rather dine with Evan, I could ask him."

Linda blushed just a little. "No, I would love to have dinner with you. And thanks for asking."

Peter started to step backwards. "Then I'll see you in half a point. You know where I live."

Linda asked, "Could we make it a quarter? I'm kinda hungry."

Peter bowed. "A quarter point it is. I'll see you then," he said, turning towards his path.

Linda watched him leave, but found herself not wanting to end the conversation. "What are we having?" she called around.

"I'll surprise you," Peter yelled back, without looking around.

## 19. EXCURSION

Rachael felt energized, wanting to talk more with the sedate man she hovered over. Her attempts landed nothing but gibberish.

“Five minutes. Just give me five minutes,” was about all Gerard could muster, rolling his eyes back into his head before passing out.

“Hmm,” Rachael said in a disappointed manner.

Wide-awake and not looking to waste her high, she rolled over, climbed down from the bed and threw on some clothes. She smiled, as the carpet always felt good under her bare feet. The cotton pajamas also provided a pleasant change from the space approved, active pressure suits that was standard issue and required usage within the station.

She reached the radial tube and grabbed hold of one of the ladder rungs. “Hey girl, where ya heading?” asked an equally energetic Jill.

“I’m hungry. Was heading up for something to make a salad with. Want to come?”

“Na, I’m going to hit the shower. I just came out to check our flight first. You know me and leaving the com-

puter in charge for too long. Besides, I had something before and was looking forward to munching on some of the leftovers from Cal-2 yesterday. Those California boys sure know how to cook.”

Rachael smiled. “So I guess you’re glad I dragged you out last night?”

Jill nodded. “Yeah, you could say that. I feel I can really talk to this man.”

Rachael frowned. “I wouldn’t say talking is one of Gerard’s better qualities, but he does have them.”

Jill asked, “In large quantity?”

Rachael smiled. “Like a carpenter!”

Jill laughed, giving her a wave as she departed.

Rachael waved back and replaced her hand to the rung. She climbed up a few levels, passing perpendicular chamber access points every couple meters. Unlike the crew torus, which pivoted to equalize gravitational forces between the rotation of the tug with the acceleration from the engines, the cargo holds were static. Under normal conditions, the tug’s rotation held the water to the bottom of these flat ring-like chambers. With forward or reverse acceleration, water would collect to push against either the front access point or the one on the far end of the small, semicircular tube, but never both at the same time. The two outermost rings were filled with water and were unimpeded by any barriers. This provided a more efficient means towards rotational control. As kids often loved to wade in round pools to produce a whirlpool, the currents produced either manually or mechanically were enjoyable to many in the program. The remaining chamber rings

had barriers and pumps to shift water for the sake of equilibrium. Several had taken California-2's example to produce gardens in these semi-rings.

Rachael came to the fourth chamber and pressed the access icon. She let out a small scream from the bee that snuck out and flew past her head. She waved her hand a few times to clear the path, jumped in and closed the hatch before any more might escape. The smell of the flowers restored her calm, as she paused to view the small landscape of her favorite place on the ship. She walked around the seventeen-meter chamber, picking a tomato, cucumber, carrot, yellow bell pepper and several leaves of spinach. She placed the vegetables in a small bag and headed past the gate to the other side of the chamber to cut a pair of tulips. She stopped to smell the flowers, bounced on her toes a couple times and went back to the torus and prep station. She used her knife to cut through the vegetables, without first needing to clean them. Seeds and clean earth made keeping a pest free garden a given. No insects, no pesticides, no problem, aside from a passing bee, whose colony was brought on for honey and plant fertilization.

The carbon knife sliced through the pepper with ease, but not completely in a smooth fashion. When hands unexpectedly pulled around her, the knife jumped an extra centimeter and into her clenched thumb. She dropped both pepper and knife in a fit of panic. Gerard grabbed the hand, spun her around, pressed the cleanly severed skin together and kissed off the excess blood. "I'm sorry, you just looked so good, I couldn't help myself."



Rachael started to relax under the protection of the man who gave her the wound. "And how do I taste?"

Gerard pulled his mouth up from the wound and spoke very gently. "The freshest red meat I ever had." With one hand he held the thumb down to close the skin and used the other to pull out the first aid kit so strategically placed in the cabinet above. He resumed his soothing voice. "Please hold your thumb in like this while I get out a bandage and ointment."

"Okay," she said, giving in to his care and guidance.

He slowly pulled out what was needed and attended to her wound. "There. As good as new."

"Thank you," she said, using only half of her lip's gratitude, with words.

Gerard supplemented his acquired portion of the salad with some chicken he sliced. Rachael chose vinaigrette, but Gerard dowsed the chicken with hot sauce and combined this into the salad with blue cheese. They sat and enjoyed the meal with the view of Jupiter and the sound of a trio sonata arranged by Handel.

"What are we listening to?" asked Gerard.

Rachael acted shocked that he wasn't overwhelmed with the same emotional response to the music. "You don't listen to classical?"

Gerard answered with a non-serious, condescending question. "Isn't that elevator music?"

Rachael opened her mouth and shook her head. "I can see I have a lot of work ahead educating you."

Gerard suggested, "Just put on something with guitars and we'll be fine."

“Are you saying you can only hear the flutes? Listen.” Gerard stopped to put some attention to the sounds. “What instruments do you hear?” she asked.

Gerard actually focused, but could only discern the sounds of a single violin.

Rachael continued, “There are actually four violins. If you listen carefully, you can hear the subtle effects of their instruments and the musicians’ timing. Two cellos, a bass, plus several different horns to accompany the flutes.”

The more Gerard listened, the more he was able to tune his ears to small variations directed by Rachael.

The other couple came around and joined them at the table. “Anything good on the TV?” Tom laughed as he found his seat.

“Yeah, how about Gillian’s Island?” Jill giggled, making fun of the dead era of sitcoms.

“Actually, we were just enjoying a little chamber music,” said Rachael.

Tom looked over at his friend. “She’s got you listening to elevator music?”

Gerard shook his head, but quickly realized he could use the opportunity to earn a few brownie points. “Elevator music? Yo man, this ain’t no reoccurring progression of the same mundane tune. This is a complex blend of string and wind instruments arranged into a symphony.”

Tom opened his eyes wide, and stretched around to examine Gerard’s back. “Sorry dude, just looking for the strings.”

Jill let out a laugh that Rachael contested. “Very funny.”

The joke faded as each attended to their meal and the image presented before them.

“Jupiter looks so close. It’s a shame we can’t have a little excursion,” said Rachael.

Gerard gave her a crazy look. “It might look close girl, but it’s further than Earth. We’d never make it there and back nor have anything to show for it. Not to mention, a lone transponder blinking its way to Jupiter would certainly give us away.”

Tom said, “I know how to disable the transponder and command would hardly notice a missing blink in a thousand. The problem is that even if we could find a water supply, say Europa, and bring back one of Jupiter’s tiny moons, Ceres is only set up to track objects coming from behind its orbit. Not to mention, pulling an object down from a higher orbit kind of defeats the purpose. Nice idea, though.”

Jill broke in, “I’ve got a better idea. You guys want to shoot for Eros?”

Gerard said, “Sure, but where is that and what’s its number?”

“She’s nuts. That’s ABO-433 and it’s almost a third the way around,” said Tom laughing, but changed his expression after seeing hers was genuine.

“433? Man, that must be big. I love the idea of flying through the heavens longer with you girls, but how the heck are we suppose to have enough water to get there and drag that thing back?” asked Gerard.

Rachael put her hands up and tilted her head in an undetermined response. With all eyes on Jill, she smiled and said, "I was thinking of taking the scenic route."

Jill got up and walked to a control station. She brought up the orbiting computer and focused on the inner solar system. "Well, we're here and Eros is over there. See anything that might help us get there without using too much of our water?"

The three of them looked over at the chart, easily seeing the red dot just off to the side of their path to Eros.

Rachael said, "Someone want to send a message to the girls telling them not to expect us for a few months?"

Gerard laughed, "I wish I could see Evan's expression when he gets the message."

## 20. SWEET AND DELICIOUS

Heather woke to nothing more than the sound of the engine's hum. Being in a strange, silent ship made her feel as lonely as that spell she had during the second year of the mission. She climbed down from her bed and logged into her account to view the daily mail from her mom. Spiritually connected by more than the same Jewish star they wore, she sensed a loneliness in her mom and wished she was there for them to console each other. She hit the record icon, but stood there looking into the feed. All she had to offer was to herself. "Tea," she said and pressed cancel.

The door slid open to a silent and vacant torus. She popped out, grabbed a cub of English Breakfast as well as a snack she brought along with her gear. As the caffeine made it to her brain, she settled in again and hit the icon.

"Hey Mom, sorry you haven't been feeling well lately. I wish you could come out here with me for a visit so I could cheer you up. The stars are like you have never seen before and right now, Jupiter is closer than you could imagine. Plus you wouldn't need mechanical assistance here. With only half the normal gravity, we'd have you dancing

around like the ballerina you were as a little girl. We feel so light on our feet here, though I'm sure it will take some adjustment for me once we finish the mission. We all have our exercises to keep our bone mass. Toe dancing is of course one of my favorite. I hear some of the crews like to spin at a full G, but only for short periods. Supposably, it is a little unsettling for their stomachs. In fact, I'm getting ready to head up for a swim in one of the water storage rings. It's nice doing laps without turning. The only problem is knowing how many times around you go.

The girls are good, perhaps a little better than usual. Not sure I want to tell you this, as I'm not so sure about it myself. Rachael and Jill talked Linda and I into switching tugs for a mission so they could fly around with a couple Navy guys they met. Linda and I came over yesterday from the station and are riding now in their tug, Virginia-7. The two guys here seem nice. I haven't really talked to them yet, but Linda had dinner with one last night. I'm sure I'll bump into the other guy today. He is cute, but seems a little quiet. I guess that is something we have in common.

Well, have a great day Mom and I'll talk to you tomorrow. Love you."

Heather touched send, finished her small breakfast and dug through the duffel bags for her swim suit.

Evan was walking around the crew torus when he noticed a few drops of water dripping down from one of the radial tubes. He walked under and looked up to see Heather climbing down, wearing nothing but a towel wrapped around her. The sight from below exploded fire

and chemicals through his blood, feeling as if he needed this woman like nothing he ever needed in his life. Fearful of her impression of him stealing a view, he hastened ahead to pretend to have some other occupation.

As her legs appeared down the ladder, he controlled his adrenaline and spoke as calmly as possible. "You have a good swim?"

She let out a little chirp from the surprise and jumped the last meter to the torus floor. The draft caught her towel just enough to give him another brief flash of the naked curves leading up from her legs. Heather stumbled as she landed, using one hand to hold the towel down and the other to hold the fold at the top. "Did you see me climbing down?"

Evan put all his energy into controlling his desire, "Why, don't you have a bathing suit?"

Heather blushed. "Well I do, but I seem to have forgotten it on the other tug. So, did you see me?"

Evan slowly walked towards her, looking into her eyes. "If I happened to be walking past as you were climbing down, I'm sure it would have been the most beautiful sight I have ever seen."

Fighting the urge to grab her, he instead continued around towards some other fictional task. Heather felt vulnerable and defenseless as he approached, but her mood changed as he walked past her. Somehow it gave her a feeling of trust and unlocked a door that she didn't realize had been closed for so long.

Evan looked around and was happy to see her watching his departure. "You want to sit down for a bite to eat



after you dry off? It sounds like we're going to be crew mates a little longer than expected."

Heather looked surprised. "Why do you say that?"

Evan completed the turn and took a few steps back towards her. "Our honeymooners decided to take a little excursion around Mars to bring back Eros."

"What? Are they out of their minds?"

Evan continued a little closer. "Actually, I wish I thought of it. The swing around Mars will give them the gravity assist they need. It'll help the mission and give them the opportunity for a beautiful flyby."

Heather relaxed and found herself enjoying the prospect of remaining longer. She decided to play into the conversation. "You seem to use that word a lot."

Evan took another step forward, standing just inside of what she might consider her personal space. "What, beauty? Only when it is presented before me."

With that, her own blood surged through, numbing her body and intoxicating her head. The effect made her unable to use her judgment against pulling the towel off and letting it fall to the floor.

After a prolonged kiss, she found herself backed up against the ladder she had just traversed down. Evan pushed his clothed body against her soft naked skin. Heather moved her hands around to hold the bars, while Evan moved his down to grab the insides of her thighs. Slowly, he lifted her up the ladder as his mouth came to the level of her breasts, belly and down further to her warm, wet lips. He could only describe the taste as delicious.

Linda woke up in Peter's cabin, afraid of what her friend might think if she knew where she slept last night. As Linda quietly rolled over to crawl towards the exit, Peter groaned and shifted in the bed. She waited a few moments before resuming her escape. She was relieved to hear no sounds as she slid the door open and made her way around to her room. She reached the cabin pair and extended her arm to touch the access icon to her door. Before she could, Heather's door popped open. Linda jumped back in surprise. Heather came out and resealed the door when she saw Linda standing there.

"And where were you last night?" she asked, seeing the condition of Linda's hair.

Linda gave a few "ah" sounds as her wheels spun in design of any excuse. Before she could say anything more, Heather's door slid back open, exposing Evan, also surprised to find company on the other side. Linda just opened her mouth, staring at Heather a moment before casually entering her own accommodations.

The four of them shared several laughs over lunch. Evan figured it was as good a time as any to inform the other two of Maine-3's excursion. "Well, since everyone seems to be in a good mood, I might as well tell you two the news."

Peter seemed slightly concerned. "News? What news?"

Evan looked over at Heather and smiled to offer her the chance to relay the information. Heather turned to the other couple and said, "Our cohorts seemed to have taken themselves a little three month vacation around Mars."

Peter looked surprised. "You're kidding me, right?"

Heather continued, "Nope. They're using Mars to gravity bounce them over to Eros and tug it back."

Peter changed his expression. "Really? Damn, why didn't we think of that?"

Evan answered, "Well, once I got the transmission, I thought to follow and pull back another rock over there. However, we were already accelerating pretty hard towards the next group of rocks and I didn't want to make that call before discussing it with everyone."

Linda said, "That kinda sucks, doesn't it?"

Evan continued, "Perhaps not. If we can grab a rock and bring it back within a month, Mars will still be in a position for a flyby."

Linda perked up. "Sweet!"

## 21. SKY GUARD

The SETI project had yet to succeed in finding signals from aliens on distant worlds, but it did succeed in inventing a means of increasing their computing power without the cost of new computers. Millions of willing people downloaded and installed SETI's program to run radio frequency analysis in the form of a simple screen saver. Growing up, James was hopeful to see, "Signal detected!" on one of the computers his family had throughout the house.

After the impact of 2027, the seventeen-year-old James Kennedy had an idea that he told his father. "I think I can prevent something like this from happening again. I want to start a company to build and sell roof-mounted telescopes that can work collectively to track passing asteroids. When in use, the owner would have complete control over their viewing aim and magnification. When idle, my company could control them to track a unique section of the sky in the highest magnification. By combining data from thousands of telescopes, the computer can compare each daily image to discover any potential Earth colliding objects."

James' father knew right away it was a great idea and that he could build such a company, with a little help. He had doubted his son once when he was in sixth grade. James had decided to do a science project to determine how far a major league pitcher could throw a baseball on the surface of each planet. With a degree in mathematics from Rochester Institute of Technology, James' father knew the complex parameters and need for calculus made this a college level project. However, with several months until it was due and the determination to see it through, James not only completed the project, but earned first place. His teacher liked that his prediction of the shortest throw on Jupiter was wrong. Even though it is the largest planet, the "surface" gravity is only two and half times that of Venus while its atmosphere is a hundred times thinner. At the best angle of thirty-four degrees, a forty-five meter per second fast ball would still drop only a few meters in front of the pitcher. James added that the pressure and searing heat on Venus would crush and cook them both, instantly.

Perhaps it was the challenge that drove his son. "It won't work. A house roof is not a vibration free structure and wiring power to the unit is something most people couldn't be bothered with," James' father said, knowing his son would figure out how to solve these problems. And each solution was an investment into the project, reinforcing his son's motivation to make it happen.

Twenty years after its inception, a computer quietly and patiently compared pictures brought in from the latest home telescopes with solar powered domes and gyro stabilizers. The confirmation triggered a remote application

on a dozen personal headsets, including James'. "Thirteen days? How can that be?"

"What's wrong dear?" asked James' wife Mora.

He responded with a blank stare. "An asteroid is going to hit New York in thirteen days."

"Asteroid? How can that be?"

"I don't know. I just don't know."

"Can't you stop it with one of your tugs?"

James snapped out of daze, realizing if word got out, countless people would die from the ensued panic. "Yes, of course I can." he said thinking, 'if only I had one in range.'

## 22. HORIZON

“We know, the Sky Guard tech just informed us. We’re alerting the tugs to see who might be close enough to intercept. It doesn’t look good, though. The supply tug is docked at Ceres and the rest are in the belt.”

James responded, “Do any countries have one ready to put in orbit?”

“No and even if they did, it would take at least a week to assemble and fuel.”

James asked, “What about NASA?”

“Sir, your project drastically cut back their funding and even their best rockets couldn’t nudge something this large in such a short time.”

James shook his head. “It doesn’t make sense. How could this fly in at such an angle, hidden around the sun, to go unnoticed until it was right upon us? And at this time. If we tried, we couldn’t have planned a worse...Wait! Do we have a track on its origin?”

“Sir, it didn’t come from Ceres and no asteroid could have been thrown into reverse orbit by the tugs without a gravity assist. It must have come in from outside the solar system.”



“Just the same, I want to see the track and feed it into my orbiting computer.”

“Sure, just let me pull it up.”

James overlaid the data from command with his computer chart of the asteroid belt. His heart sank as he saw the result. “Vesta!” He quickly reestablished a link and told command, “Notify Ceres that they have a rogue tug near Vesta throwing rocks at the Earth.”

“Vesta? What’s Vesta?”

James responded, “It’s the second largest object in the belt and currently on the opposite side of the Sun from Earth, obscuring our ability to track anything coming from there. Just follow the path of the asteroid and you’ll find it.”

The signal took forty-five minutes to reach Ceres. The dark object that appeared on the horizon had been traveling for half as many days. In confusion of hearing the transmission with the sight of the approaching shadow, Henry Jervous could only stare blankly with his mouth open for the few seconds it took to understand the station was under attack. His perception of time resumed, allowing him to jump to his console and hit the alert. “Evacuate! All tugs liftoff immediately! This is not a drill. Asteroid impact in point-zero-zero-three. Repeat; this is not a drill! All tugs liftoff, immediately!”

The kilometer wide rock came in at the speed of Ceres, but in the opposite direction. Henry watched as the station rotated with the surface of Ceres to meet up with the approaching object.

Visibility faltered as dust was kicked up from the few tugs that had time to make a panic launch. With lack of calm or course, France-23 veered up and away from the approaching rock, knocking into the bottom of Florida-9. The latter violently tipped sideways from the impact, breaching the centrifuge chamber and disabling the neighboring ion engine. The crew, who had no time to strap in during the emergency lift, were drawn out into the dust filled space. Two of them were thrown back down towards the surface by the exhaust of the French tug.

Florida-9 continued to rotate slowly as it listed up and over, bringing the disabled engine closest to the station. The other two overcame the upward motion, thrusting it back down towards Ceres-1 on top of the mining vessel. Henry looked out in disbelief, realizing he had yet to radio a distress back to Earth. All he got out was, "Mayday, Mayday, Mayday!" before the tugs collided, crumbling the vessels and spilling thousands of gallons of water over the station that instantly turned to ice in extreme cold.

Virginia-7 and other doomed vessels made the hopeless effort to evade the approaching mass. But where the others flew away from the rock, Evan headed straight towards it.

Peter freaked. "What the hell are you doing? Crashing into that thing isn't going to stop it from hitting the station."

Evan gave a quick, "Trust me," and resumed his focus on the flight path.

Peter nervously turned his attention back to the screen and realized Evan wasn't heading for the center of

the rock, but towards the retreating side. They cleared the edge and headed around through the wake of the asteroid. They continued in the direction the mass had come, putting it between them and Ceres.

The thrust from the lift off and course changes produced varying G forces that were hard to ignore, even when asleep. Linda stumbled out of bed to find out why they were heading back up so soon after docking. Before she could ask, she looked out and saw the impending destruction of the station.

Peter said, "Get Heather and yourself down to a pod. Chances are good we're not going to make it out of this."

The impact occurred just west of Section-D. The frigid cold was replaced with an explosion that made the conditions more like the solar surface. The ejection of land, water and station caused a cone that shot into space and the evading vessels. Several pieces of rock shot into the belly of France-23, causing an irreversible vent of water and air, reducing it to nothing more than an icy grave.

The only void in the debris field was in the direction of the rock's origin. Virginia-7 was untouched, without even being hit by the sound of the impact within the vacuum of space.

Linda and Heather watched an echo of the external view on the pod's display. Heather opened a link and asked, "What happened?"

"I'm not sure," Evan said. "An asteroid came out of nowhere and destroyed the station..."

\ Peter paused and triggered the transmission. “Ceres station or any tugs, this is Virginia-7. Please respond. Repeat, this is Virginia-7, available to provide assistance. Please respond.”

“Virginia-7. This is Spain-24A. My tug has a breach, but I was able to take cover in a pod. Please respond.”

“Copy that 24A. Set a beacon so we can track your position.”

Evan came about and slowly traversed the debris field towards the beacon. Peter cursed, hearing the small impacts that echoed throughout the ship. Evan tipped the vessel side to side to maneuver the non-linear path. “Jeez man, they should have designed lateral engine ports into these things. It’s freaking impossible to negotiate this minefield,” he said, trying to focus all his attention into the flight path.

“Watch out!” Peter screamed, pointing to a tug fragment. Evan complied, flipping the tug hard over to reduce the impact to a glancing blow. “That looked like a bathroom section,” Peter said, following his view past the side of the tug.

Evan said, “We’ll have to send out a couple pods to collect the usable components of the tugs.”

“So many people. How could this happen?” sobbed Linda.

“You think maybe Jupiter being so close pulled something off its orbit?” asked Heather.

“Geez, I don’t know. Did it come from from a higher orbit?”

“Must have. It came in so quick.”

“I can’t believe this happened.”

“God, I hope there are more survivors.”

“Evan better be careful or we won’t survive either.”

“Hey, look at that,” Heather said, pointing to the dust storm of small particles that seemed to blow around the edge of the shield-protected tug.

Linda gave a look and remarked, “Nice. Too bad that doesn’t work on the larger rocks.”

Heather nodded. “Yeah, like a Star Trek tracker beam. Maybe some phasers to blow our way through, eh?”

Linda looked confused. “Star Trek?”

“You know, ‘Beam me up Scotty.’”

Linda just shook her head.

“You gotta be kidding me! You’re a space pioneer and you never heard of Star Trek?”

Linda repeated the gesture.

Heather continued, “It’s an old TV show back from last century.”

Linda said, “Well, that explains it. I don’t watch videos that were around when my grandfather was a kid.”

Heather looked back at the screen. “God, how could this happen?”

Evan let out a sigh. “Looks like it’s clearing up a bit.”

“Over there. I see her.” Peter changed the view to zoom in on that location. The image showed a slowly rotating tug that looked no worse for wear from their angle. As the far side came into view, they could see it was almost completely missing. One of the three torus sections, along with several water chambers in towards the center were

gone. The broken shell showed a jagged edge, outlining the large impacts.

“Spain-24A, this is Virginia-7. We’re coming up on your position. Can you launch or should we send in a pod to get you out?”

“Main power is out, but I can open the bay doors manually and launch. How bad is it out there, can we salvage the ship?”

“A third of the dome and components are gone. I think we can rebuild a new tug by combining components from other damaged tugs. You want to come over? We can set a clamp to tow her back to Ceres.”

“Roger that.”

## 23. MORNING VIEW

Tom and Jill woke to a beautiful view of Mars. No longer a bright, reddish dot in the distance, but a detailed globe the size of the Moon from Earth and increasing by the minute. The screen was less than a meter above them, but provided a stationary view of the planet and surrounding stars in full depth and color. It was like gazing out a window into the mists of the universe.

Tom said, "Nothing like sleeping under the stars."

Jill gently smiled. "It is beautiful, isn't it?"

Tom looked at her. "Almost as beautiful as you."

Jill rolled on top to lightly kiss Tom as she reached for a cleansing tablet. She pulled back, smiled and popped the pill before Tom said anything. She felt the typical sensation of a dissolving tablet in her mouth before involuntarily swallowing, leaving her teeth and breath as desired.

"Got one of those for me?" Tom asked leaving his mouth open. Jill popped one in and waited the ten seconds to experience his mouth on hers, his arms around her and the warmth of his body within her.



“Maybe you’re right. This is a little cramped for a bedroom,” conceded Jill.

“It’s not a room, it’s a bed. And a lovely one at that. Obviously, you have a romantic heart. It’s just enough for two people to enjoy each other’s company without pulling space away from the main living quarters.”

Jill added, “Well, it’s the first time I had two people up here.”

Tom smiled and kissed her, again.

They found the shower was also a little cramped, but enjoyed it just the same. Tom looked into Jill’s eyes and said, “The Mars crew never had it so good.”

“They might as well have been driving a Ford Pinto,” said Jill, testing Tom’s historical knowledge.

“Don’t you mean Chevy No-Var?”

Jill laughed and congratulated him with a wet kiss.

They finished and circled around to meet up with the others. One look and they could tell there was trouble in paradise. Jill took Rachael back around as Tom jumped into the seat next to Gerard. “Dude, we still got a couple months before getting back to the station. Don’t make this a hell ride.”

“It’s not me man, she’s nuts...okay, maybe it is me, a little. She asked me about who else I knew from the tugs, meaning other women and I said I knew a few. But she didn’t leave it at that. She wanted to know who. So, I told her.”

Tom eyes opened wide, “You mean you told her about Madia?”

Gerard nodded.

Tom said, “Jeez, you gotta learn to think what you’re saying before you say it.”

“No way man. I can’t change the truth and I won’t. I am who I am and I’m not going to apologize for my past deeds. The problem is, I really like this chick. She’s so wild and full of life one minute and the next she’s falling apart in my arms. I don’t know why, but I like holding her together.”

“Sounds like you need to tell her how you feel and that it’s different from the others before, so we can clear the air and enjoy this fly-by. It’s freaking Mars, Dude!”

“You’re right, you’re right,” Gerard said climbing out of the seat, but added “Dude!” just to rub him back a little.

Jill came back and took the pilot seat, just shaking her head. “Don’t worry, Babe, he digs her, almost as much as I dig you.”

Jill asked, “So you dig me now, huh?”

As Tom was thinking of a reply, he was interrupted by a transmission. “Mayday, Mayday, Mayday!” Tom waited for the trailing critical message, but it never came.

“That sounded like Henry from command,” said Jill.

Tom switched to an open frequency and broadcast, “Ceres, this is Virginia, cancel. This is Maine-3. What’s the nature of your Mayday?”

Jill suggested, “Maybe we should head back?”

Tom replied, "Let's wait for a transmission to come back. We have a couple hours to Mars and can use it to swing us back there faster, if needed."

"You know that message you sent contains our solar position. You might as well switch the transponder back on," said Jill.

"I'm not worried about that. You know they were going to ask us how we were able to get Eros around in the first place. I just didn't want them turning us around saying it was too risky."

Jill looked confused. "So, you're going to switch it on?"

"Nah, if the message is real, they will respond. Otherwise, we can switch the transponder on after our kick around Mars. By that point, we're committed and they'll have to let us go for it."

Jill looked around and realized this might be more important than their friends' little fight. "You guys better come over here."

Other transmissions started coming in. "Ceres station or any tugs, this is Virginia-7. Please respond. Repeat, this is Virginia-7, available to provide assistance. Please respond."

"What the hell is going on over there?" Gerard said.

"I don't know. All we got from Ceres-1 was a Mayday. Nothing followed until now," said Tom.

"We gotta go back," said Gerard with Rachael nodding her agreement.

Tom agreed, "Yeah, looks like that's a good idea. However, we'll get there faster if we do a swing around Mars. I'm going to pick up the pace; engaging engines."

Jill said, "Might be a good idea if you let me drive."

Gerard looked puzzled. "I think Tom can handle a little flyby. He trained the rest of us at the Naval Academy."

Jill shot a look at Tom with her mouth wide open, but was at a loss for something to say.

As the vessel accelerated, the gravitation forces increased. The computer quietly used the force information from the engines to adjust the pitch on the cabin sections so as to maintain a smooth footing for the crew. Aside from the small rearrangement of the walk way and consoles, rotated down from the outside perimeter of the torus, the crew might not have noticed. They continued without missing a beat.

"You said you didn't know how to fly these things," Jill said smacking him on the shoulder.

"Whoops," said Gerard.

"Well, I couldn't let myself fall for a girl unless she knows how to communicate," said Tom.

"And?" said Jill.

"You are a very good instructor."

"Thank you, I think. You sure have a strange way of communicating your feelings, but I love you, too," Jill said, leaning over to give him a kiss on the forehead.

"If we're heading back now, we might as well turn our transponder back on," she added.

“Good idea, Babe.” Tom popped up the Linux interface and triggered the transponder daemon to start back up.

Gerard said, “This better not be a hoax by Evan to get us back quicker.”

“Oh God, I hope it is,” said Rachael.

As they approached the planet, they heard more chatter about the incident and the fate of the station. Tom pointed out, “All the tugs and station designs are built on redundancy, but not the mining vessel. If that failed, it would take out the whole operation. Someone did their homework.”

Jill changed her expression from concern to anger. “Wait, are you saying you think this was intentional?”

Tom nodded. “It must have been. The object came in fast, in a reverse orbit and hit the station dead on.”

“Yeah, I guess you’re right,” Jill agreed.

Tom thought about it for a moment. “I’m not sure heading back there is going to serve them best. Half of those ships aren’t going to have enough water to get back home. We’re in a position to slingshot home to pick up supplies. Perhaps we should do that, instead?”

“Makes sense to me,” said Rachael.

“I don’t know, man. If we swing back over there, we would still have a lot of fuel. We could probably have them tether together and drag a bunch of them home,” said Gerard.

Being the last to speak, the three of them looked over at Jill. After taking a moment to think, Jill said, “I am not

about to give up on this mission and see it turned into a rescue. If we head back to Earth for the purpose to provide support to the tugs, the best thing that they can do is give us mining equipment. No matter what it might cost, they will give us what we need to save lives and in doing so, possibly save the operation. Let's go home."

Tom said, "Okay girl and of course, it is your ship."

Jill sat in the copilot's seat and hit the transmit button. "Florida command, this is Maine-3. As you have heard, Ceres station has been destroyed by a directed asteroid. We don't know how or why, but we are in a position near Mars in an attempt to swing over to tug Eros. We are diverting to use the Mars gravity assist to reach Earth in fourteen days. Please have water, food and mining supplies ready for us to take back to Ceres. Without a water supply, many ships will be stranded there. Out."

Tom changed course towards the outer part of Mars for a swing to the inner solar system. Punching in a new destination, the orbiting computer overlaid a course image around Mars to take them home. As with a hovercraft, the ship turned to face beyond the guided path, until their course curved in to follow the computer's outline.

## 24. OUR ONLY HOPE

It took an hour and a half to get any signal back from Ceres. James waited in his office, hoping for a message back telling them a tug was magically en route to intercept the asteroid. Logically, he knew this was unlikely, but refused to let fear play into the outcome. His hope built, leaning forward in his chair as the computer counted down to zero. Nothing. Enough time had passed without even an acknowledgment of the transmission.

James moved his hands to the keyboard to run a diagnostic, but was halted by the repeated word; "Mayday." He stood up, puzzled by the words and waited for the message that was supposed to follow. What did follow, painted the blackest picture James could ever imagine. James had the team build redundancies into the system, but never had even considered the project being attacked and used as a weapon against the Earth. Left without the ability to think or even breathe, James was consumed by the feeling of wishing for his own mortality. He fell back down in his chair, unable to even register the chatter still being received.



“Sir, we just got telemetry on a tug heading towards Mars. It’s Maine-3. Not sure why we didn’t have this before. Must be their beacon is turned off.”

The suffocating feelings began to clear as James heard the report and allowed the words to process within his brain. “Maine-3...Maine-3? That’s Jill Brand’s ship.”

“I don’t think so, sir. The telemetry came in from a message with a man’s voice.”

“Oh God, don’t tell me they hijacked more than one of our tugs. Let me hear the message.”

Command played the message, “Ceres, this is Virginia, cancel. This is Maine-3. What’s the nature of your Mayday?”

“That voice sounds familiar...Virginia...Virginia-7! That’s the naval instructor, Tom Breslin. What the hell is going on up there? Show me the telemetry so I can chart this on my computer.”

James saw the chart and realized they had a chance to intercept the asteroid, if they had enough water. However, it would all be for nothing if they weren’t told about the rock before reaching Mars. “Quickly, send Maine-3 the telemetry of the asteroid with instructions to intercept and divert.”

“But sir, are we sure the ship hasn’t been hijacked? Perhaps we should —”

James cut him off. “Do it! Do it now!”

“Yes, sir.”

James again found himself back in his chair, waiting for the slow moving green line to stretch across his screen

from Earth to the small dot that blinked near Mars. Even though it traveled at the speed of light, he compared the pace to that of a snail. The dot moved far slower, but was now dangerously close to disappearing around the far side of Mars. The computer had first showed that the message would be received with a minute to spare, but the acceleration of the blinking vessel reduced its blackout period faster than the approaching message.

He watched the collision within the animation and looked down to see both counters at zero.

“Oh damn. They were our only hope.”

## 25. FLYBY

“Look, you can see some of the impacts,” said Rachael.

“I’m surprised that after over thirty-thousand impacts, it doesn’t look that different,” said Gerard.

“Well, it might not, but it’s already five-hundred-thousand kilometers closer to the Sun with a more circular orbit. When we push Ceres into it, and we will, you will notice a difference,” said Jill.

Tom smiled at the determination in Jill’s eyes. Even though he never said it directly, he knew then he loved her.

“Well, here we go. You guys should buckle up,” said Tom. The ship continued to accelerate as it started around the planet. Even though they were making a left turn at a hundred kilometers per second, they would notice no change in gravity. Their path was straight through a fabric of space that was warped by the mass of Mars. Just the same, Gerard and Rachael followed the advice.

“Maine-3, this is –” was all the message stated before it was blocked by Mars.

"Who was that?" asked Gerard.

"Not sure. We're going to have to wait until we clear the planet and ask them to rebroadcast," said Tom.

"Wait, let me check the data to see where it came from," said Jill. The message contained more than a solar address. It contained an orbital chart with the location and velocity of an object. "The message came from Florida Command, but I don't understand what the data means."

"Let me take a look," said Gerard.

Jill pulled it up on her screen and said, "Must be another tug, because it's heading for Earth."

"That doesn't make sense, it's not coming from Ceres," said Gerard.

Jill followed the track back and zoomed in on that section of the asteroid belt. "Oh my God, it's Vesta. That's no tug; it's an asteroid. They're attacking Earth."

"My God!" Rachael said with her hand over her mouth.

Jill looked at the map and played the numbers in her head. "I think we can stop it," she said, looking over at Tom.

Tom quickly used the telemetry of the object to plot an intercept. "Hang on. We're going to have accelerate hard and fly even closer to the atmosphere if we're going to make it on time." The rotation of the tug slowed to a stop as Tom pushed the engines towards full. Without the mass of an asteroid in tow, the engines produced the full force of Earth's gravity without need for a centrifuge. It was the first time any of them had felt more than half a

g since leaving Earth a few years back. Rachael let out a small sound of involuntary protest to the force.

Gerard's body accepted the extra weight without a blink, but his head was still confused. "I don't understand. How do you know that's an asteroid?"

Jill answered, "I didn't realize before how they could have towed the other asteroid into a reverse orbit into Ceres and at that speed. They used Vesta. It's the second biggest asteroid, about a tenth of all mass in the belt. They used it to slingshot a rock at Ceres and they're doing the same thing against Earth."

"Why would they do that?" asked Rachael.

"I don't know, but we have to push it out of the way," said Tom.

"Doesn't Earth have a contingency against this?" asked Gerard.

"Sure," said Jill, "But they would expect to have a little more time. They must have just found out about this, otherwise we would have heard something sooner."

Tom growled, "Obviously, this was well planned; those freaking bastards."

Gerard said, "Hey, shut that transponder back off. We don't want to be telling the douche-bags who did this that we stopped their attack. They might send another rock before someone has a chance to blow them away."

The ship zoomed just over the atmosphere. So close that they could make out fine details on the surface. The most beautiful sight that any of them had ever seen, but

somehow the moment was lost amidst the anger and confusion. And just as quick as it came, it was gone, putting them back in the emptiness of space racing towards the impossible task ahead of them.

## 26. COBURG

“Ceres, this is Germany-26. We’re coming in with a rock called Coburg. What should we do with this thing?”

Evan hesitated only a moment before realizing someone had to take command. “Germany-26, this is Virginia-7 on a secure line. Proceed as planned. Use your orbiting computer to unload the asteroid around Ceres and into Mars. Once you unhook, help us collect the derelict tugs and equipment. Avoid making open transmissions. This was obviously an attack. Ceres Command, out.”

Germany-26 confirmed on a secure line and sent their rock around Ceres.

Evan turned to his co-pilot. “Peter, set up a link with each vessel to notify them we are in command and have them communicate only through secure channels.”

Peter nodded. “Right. Good call, but how are we going to gather all this scrap? It would take months to connect to each piece and drag it back,” Peter calculated, looking at the debris cloud on his scopes.



“How many of those magnetic clamps do we have? Perhaps we can turn the ribbon into a large junk yard crane,” Evan suggested.

“We have a few, but aside from the thermo shields, most of those components are carbon-fiber. Might be hard to get them to stick.”

Evan nodded. “You’re probably right; however, it should work on the derelicts which still have their engine section. Let’s focus on them first.”

The daily cycle of ships returned to learn the news, drop off their payload and lend a hand in the effort. After unloading their asteroid, one vessel flew around to get a better look at what was once the station. “Command, this is Texas-12. We could use a drink and there seems to be a pool down where the station was.”

“Copy that. Take what you can and I’ll direct others to follow suit.”

While there was heat from the impact, water swelled up to the surface. The tugs lined up to drink their fill before the sun set and the well froze. Even though the vegetation ring on most tugs could provide enough food to last them several months, without water the engines would run dry and shut down every system, including heating and lights. Evan knew the safe thing was to have them all return to Earth, but he wasn’t about to make that call. There had to be another way.

As more tugs returned, the task of control grew beyond the span of one crew. Evan maintained

command while designating other tugs to handle space traffic control, equipment salvage, tug repair, accountability and water usage. Most importantly, he wanted scopes and radar to focus towards the path of the asteroid. Not only to evade another attack, but also to prevent the responsible party from sneaking back and blending in with the friendly ships.

“Traffic Control, this is Ceres Command. Record all transponders and make a log of each tug coming in. Once you establish communication, direct them to turn off their open transponder and have them send secure and regular telemetry updates, instead. Give them this access code to a secure meeting I will be setting up with each captain. We have some decisions to make. Command out.”

Old Ceres Station was turned into an ice covered junk yard. The clean surface made it easier for the tug components to be pulled apart by pod crews without contaminating the sections with dust and debris. Within a day, they had a new tug assembled. Nick inverted Connecticut-2 and hovered above the assembled vessel. With the umbilical extended, the newly christened, Ceres-2 kicked into life from the welcome jump start. While his crew cheered, Nick opened a link. “Command, the Phoenix has been reborn from the ashes.”

“That’s good news Nick. I’m going to send over my pod crew to man her.”

“Ha-ha, Captain Tom. Thought he didn’t want to be a tug captain,” Nick laughed.

“Well actually, it’s Captain Heather. Tom and Gerard are the temporary pod crew on Maine-3.”

“Maine-3? Is that vessel even here?”

“That’s a negative. Long story; I’ll fill you in later. We have this meeting coming up and I have a few things to prepare.”

“Welcome captains and thank you for your help maintaining organization during this tragic event. First order of business. Without a regular supply of water from Ceres and food from Earth, we can’t continue the mission as is. We need to form a plan. I’ll pick one captain at a time for your suggestions. Please state your ship name and keep your comments short. Proceed.” The list of icons for each vessel lit up, aside from a few. Evan picked one at random.

“This is California-15: The plan should be we return to Earth. Without food and water, we can’t stay here. Let’s go home and regroup there.”

“England-27: To hell with that! We need to stay and defend the mission. Our vessel has water and enough bangers to last us a month. Once this meeting is through, we’re heading out for another stone.”

“This is Ceres Command: 27, I appreciate your devotion to the mission, as I share your feelings. But let me be clear. There is already one rogue out there and I am not about to allow anyone to freelance this effort. We will figure out how to save this mission, but we will do it as a team. Are we agreed?”

“England-27: Yes agreed. I just don’t think this is the time to be putting our tail between our legs.”

“Australia-8: I agree with my mate. If we ration ourselves, we can continue a limited tow schedule until Earth sets up a new supply route.”

“New York-10: Earth’s supply tug has been destroyed and it will take some time before they can build, lift and assemble a new vessel. We should send one back to reestablish this route.”

“Command agrees, but I would like to have tugs paired up until we deal with the threat. You and California-15 can return to establish this route. However; I would like your pod crews to remain and help man the repaired vessels. Agreed?”

“New York-10: Acknowledged.”

“California-15 confirms.”

“Connecticut-2: We have to do something about that rogue and my team wants to go after her.”

“Command: I agree Nick. But I want two other fully manned tugs to go with you. Other captains, please release now unless your team wants to volunteer to join them.” Most of the icons remained lit. Evan quickly picked two Navy crew tugs to join them. “Okay, Texas-12 and Mississippi-2 have been selected. Nick, please take command of this mission. I want a discussion between the four of us after this meeting to devise a plan. We have no weapons, so you guys are going to have to come up with something. If possible, I would like to reacquire that tug, but not if it is going to represent an increased risk to your teams or vessels.”

“Connecticut-2 acknowledges. We’ll get the bastards.”

Jay from Mississippi-2 was cross about an Army crew taking command over this mission, but couldn’t think of a reason fast enough to lodge a protest. The channel-open light eliminated, but he hesitated for a response. “Jay, did you have something to add?”

“Yes, this is Mississippi-2. How do we know the rogue didn’t hide behind that asteroid? Maybe they’re listening to us right now!”

“Command: That is possible Jay, but I don’t think it is so. Every ship at the station was damaged or destroyed in the attack, except Virginia-7. The rest returned here with asteroids in tow. No, I think they are still ahead of our orbit on or near Vesta.”

“Switzerland-3: I disagree with this mission. We need to ration our water, not waste three full tugs to go off searching around for them. Let them come to us.”

“Command: We can’t do that. If they find a water supply, they can launch another attack towards Earth. We have to act.”

“Washington-4: What is the status of their attack? Why are we not sending a vessel to help Earth?”

“Command: None of us here could get there in time. The best thing we can do is make sure no other rocks are sent. However, one tug is in range and it is on an intercept. That’s all I’m going to say about that and I expect each of you to keep this confidential. As I said before, we can not tell our friends or families anything about this else it could set off a destructive panic back home. Just rest assured, Earth is safe.”

## 27. FLYING INTO THE SUN

“We got a problem,” Jill quietly said to Tom.

“Yeah, I’ve been playing with the numbers myself. We don’t have enough water, do we?”

Jill shook her head. “According to the computer, we’ll have enough to slow down to match velocities with the rock, but there won’t be any left to move it a meter, let alone break it away from Earth’s pull.”

“Well that really sucks, doesn’t it? So, what do we do?”

“How should I know?” Jill said, feeling the pressure of being put the spot.

“You’re the smart one. Can’t you think of anything?”

Jill squinted her eyes and rolled the wheels in her head. She spun back to feed some more numbers into the computer. “No, that won’t work.”

“What won’t work?”

Jill tilted her head a little. “Well, I was thinking of pushing the rock instead of pulling it. We don’t really need to see where we’re going; we just need to push it in further towards the Sun.”

"Push or pull, wouldn't we still have to match velocities?"

"Sure, but when we get close, part of the engine exhaust to slow us down will be pushing on the asteroid. It won't have that much effect, though."

Tom nodded. "So, what we need is a big pogo stick?"

Jill falsely agreed. "Yeah, a hundred kilometers long."

Tom turned his head and shouted back around the torus. "Hey guys, we need help with a little problem."

Rachael followed Gerard around, who asked, "What's wrong man?"

"Seems we don't have enough water to slow down with the asteroid and tug it out of the way."

Gerard freaked. "What? Don't you guys have any good news for us?"

Tom replied, "Sure, we're still alive."

Gerard didn't seem convinced. "Yeah, where's some wood to knock on?"

Jill replied, looking around the plastic and carbon composite chamber. "I'd say we're a little short on wood as well."

Rachael put her arm around Gerard. "Sorry to hear that, Jill."

Tom shook his head. "Very funny, but we still have to figure out how to move that rock."

Rachael perked up. "Can we push into the asteroid, instead of circling around to pull it?"

Jill nodded. "Yeah, we thought of that already. It would help, but not nearly enough."



Gerard thought about it for a moment. "How about putting the tug into auto pilot to hit the asteroid at full velocity, while we escape in the pod?"

Tom shook his head. "Not bad, but even at that speed, the tiny tug probably wouldn't have a big enough impact."

Jill lifted her finger to make a point. "Actually, if we put all the energy into velocity, it should completely transfer to the rock, as long as we exhausted the water before the impact. And we would hit it much sooner if we start now."

Tom mimicked her finger lift. "Actually, it wouldn't all transfer. Some of the energy will be turned into heat and other force would be wasted on small fragments spewed off the surface. Might still be enough, though. The real problem is that the pod provides very little fuel storage. We wouldn't be able to slow down enough to avoid flying into the Sun. I'd say we have seven days to come up with an alternate solution."

This time, Jill put her hands on her hips. "Well, five days, being that we have enough water for two full days of full thrust. But like I said, we'll have a better shot at it if we start now."

Gerard waved his hands to discard that suggestion. "Whatever the case, we need another solution. I'm not flying you girls into the Sun and the other tugs would still need our assistance."

Rachael gave him a surprised look. "It was your idea, sweetie."

Gerard admitted, "Well, it's a bad idea. Anyone else have something?"

Rachael suddenly lifted her head. "What if Earth sent a rocket with a water container?"

Jill nodded a little. "That might help, but it would also have to reverse its course for us to connect to it. It would need the thrust of a tug to do so. I don't see how they could put such a ship together in couple days, send it our way and have it stop where we need." Jill continued, "Anything else?"

Tom gave it some more thought. "Maybe we can catch the water container with a make shift mitt?"

Gerard got excited. "Okay, space baseball!"

They could tell Jill didn't like that idea. "More like lacrosse, but I still don't think it will work. The speed differences are too great. It would be like catching a bullet with a tissue paper net."

"I got it!" said Tom. "We can print out a long carbon spike, attach it to the end of the ribbon and fly it into the asteroid as an anchor. Instead of slowing straight down, we swing around."

Gerard liked the sound of that. "Yeah man, make like Tarzan. Now you're talking!"

One look and they could tell Jill still wasn't convinced. "Nice idea, but you know the replicator can't make anything that large."

"Maybe not, unless we made several separate segments that screw together."

Gerard added, "Yeah Jill, we build it in segments." He put his hand up to slap that of his friend in approval.

Jill didn't even bother to turn to punch in the numbers herself. "Computer, calculate the centrifugal force in

Earth gravities of a ten kilometer orbit at a hundred-thousand meters per second.”

“Sixty-four-thousand, one-hundred fourteen, point zero, eight, one, six.”

Gerard’s let his jaw hang open a little too long at the computer’s response. “Sixty-four thousand times that of Earth’s gravity? You gotta be freaking kicking me. Jill, tell me you rigged the computer.”

Jill smiled. “Computer, if I dropped a rock off the Grand Canyon, how far would it go in ten seconds?”

“Nine-hundred fifty-seven meters, plus or minus one meter depending on atmospheric pressure using a spherical rock comprised of granite.”

“Sounds like it is working pretty good to me.” Jill looked back into space and asked, “Computer, at what speed would a vessel be traveling within a ten-thousand meter orbit in order to produce one g of centrifugal force?”

“Three-hundred ninety-two point three, four, nine, two meters per second.”

Jill echoed the response, “We’d have to slow down to four-hundred meters per second. That might save us half a percent of our water.”

Gerard, shook his head, “Damn woman, do you sleep with your math books?”

Tom gave him a, “Hey, that’s my girlfriend you’re talking to.”

Gerard laughed. “I guess that makes you a text book.”

Jill leaned over to kiss Tom. “Yes, he’s the Kama Sutra.”

Tom smiled and leaned back, resting his hands behind his head.

Rachael broke in, "Come on guys, this is serious. We gotta think of a solution. There has to be something we can do."

Gerard suggested, "Yeah, how about eating breakfast? I can't think on an empty stomach."

This time, Rachael had her hands on her hips. "Millions of people are going to die unless we can figure something out and all you can think about is your stomach?"

Tom nodded. "No, he's right. A lot has been thrown at us. We need to take a step back to be able to think more clearly. We might as well discuss it over breakfast."

The two men got up and Jill followed, shrugging her shoulders at her disappointed friend.

## 28. SHANKAR

“Something happened. They should be around Mars by now but we’re not getting any telemetry back.”

“Give them a few more minutes before you jump to any conclusion,” said James.

Five minutes came and went. “What do we do now, sir?”

“I don’t know. I just don’t know.”

“Florida Command, this is Maine-3 on a secure channel. We received your data and successfully used Mars to change course towards the object. The assumption is that this is an asteroid directed towards Earth. Our open transponder has been switched back off, but we will send you regular updates. One problem though: We are accelerating hard to catch up with the asteroid, but will not have enough water to slow down and tow it out of the way. Please provide whatever assistance you can. Out.”

The sigh that James released in the middle of the transmission was replaced with a sudden intake and a new dilemma once the message was complete.

“Sir, how can we assist them?”

James responded, “Well, we’re not going to figure that out between the two of us. Quickly, bring the lead engineers on line, please.”

“Acknowledge. Give me a few seconds to link them into the conversation.”

A dozen engineers from around the world felt the connection and chose to complete the link once they saw who it was. Shankar was using the urinal within the Karachi office building when the call came in. He kept his mouth closed until he shook off the excess and returned to his desk. He could see and respond anywhere to the presentation projected into his mind, but found it easier to think at his station.

“Sorry to disturb you all from whatever you were doing, but I have some tragic news and desperately need your help. Ceres Station has been destroyed by an asteroid attack from a rogue tug. The same tug has launched another asteroid around Vesta, which will impact New York City in thirteen days unless we can divert it. There is a tug that will rendezvous with the asteroid in nine days, but will need all of its water to slow down and hook up with the rock. I need your help to figure out how to supply them water, maintain their momentum or give them another means to stop. You will see, within the data I sent, the telemetry of the Earth, the asteroid and our tug. Earth is traveling at thirty kilometers a second in the direction of the object that is traveling at fifty kilometers a second in a reverse orbit towards us. An eighty kilometer per second

impact of a kilometer wide object will lay waste to more than New York, but much of the North Eastern United States and part of Canada. I need ideas and I need them now.”

Shankar quietly listened as he drew some of the details out before him. Ideas starting coming in from other engineers, which he quickly discarded for one technical reason or another, the biggest being time. ‘Whatever could be sent, it would have to be ready by tomorrow to make it over to the rendezvous in nine days,’ he thought.

A heavy water tank was not feasible. It would be easy to space lift, but a vessel to tug them would have to accelerate to twice the orbital velocity of Earth and then reverse at three times that speed. Without a tug available, they would have to rely on existing chemical rockets.

The same chemical rockets could have been used to explode nuclear devices in front of the fairly small object. Shankar thought how ironic it was that the United States signed the international ban on weapons grade plutonium to prevent a device from being smuggled into New York City, when the same devices could now be used to provide its salvation. If they had more time, they could have centrifuged the matter and reassembled the weapons. He wondered if the treaty satellites above were recognizing this production in a hopeless effort by the government to build a nuclear device.

“What if they hook the rock with their cord extended to swing around instead a straight stop?” Paul suggested.

The numbers danced in Shankar’s head. A hundred kilometer per second swing with a ten kilometer cord



would produce thousands of G's. Even if they could noose the rock at that speed, without losing the three kilometers on the loop, the forces would squish the crew, tear the ship apart and/or snap the cord. Certainly the latter, as the lightweight ribbon was not designed for such loads.

Shankar looked at the layout of the orbits in front of him. It lacked the tools at hand. 'We can bring objects to space, but that will take costly time. What is already there?' he asked himself. 'A thousand satellites that provided communication, positioning, take measurements, and observe distant worlds.' There was nothing useful. He needed something with significant propulsion. 'It would have to be lifted,' he thought to himself. 'Lifted?'

"That's it!" Shankar said, not even noticing the conversation around him.

James broke in. "You have something to add, Shankar?"

"Yes, we need to use the lift."

"Lift? What lift?"

"The space elevator. SpaceLift used the tug designs to make their new station. They needed better propulsion to avoid impacts, bear heavier lifts and provide hotel rooms."

James was surprised he didn't think of this before, but it still left the problem of reversing course to match up with an object coming in the opposite direction. "But how do we stop SpaceLift's station once it gets there?"

"We use Paul's idea. A ten kilometer swing would never work, but SpaceLift's larger ribbon is forty-thousand kilometers. It is already stationed beyond orbit, being held back from leaving Earth by the ribbon itself. All we need

are some chemical rockets to provide us with the extra boost to reach the intercept point. The hard part will be creating a noose to catch the asteroid while the station is at the far end of the cord to maximize their swing.”

James asked, “And what about the tug?”

“They will have to catch them during one of their swings around the rock. SpaceLift’s engines are not strong enough to drag that asteroid very far. They will need the tug to do this.”

“Excellent Shankar! Work out the details with the group while I ask a friend for a little favor. You have the lead.”

## 29. A SMALL FAVOR

“James, how have you been? Starting a new project to build another world?” asked Bill.

“Well, actually I’m starting a new project to save the one we’re on.”

“Huh?”

James explained, “I’m sorry, but I have some troubling news. We discovered earlier today that an asteroid is going to destroy the North Eastern United States in thirteen days unless we’re able to divert it.”

Alarmed, Bill asked, “Are you serious? How did we not see this sooner?”

James continued, “Because it was directed towards us from the other side of the sun.”

“Directed? You mean from Ceres?”

“No, from Vesta. An object about the third the size of Ceres, but still large enough to make it possible for one of my tugs to use it for reversing the orbit of a small asteroid.”

Bill asked, “One of your tugs?”

“It seems so. A rogue tug must have snuck away from the group and did this.”

“Oh my God! Why would they do that?”

“I don’t know. No one ever thought this type of thing might happen; else we would have produced some type of safeguard. What I do know, is that we can stop it from hitting the Earth. But to do so, I will need your help.”

Bill reassured him. “Of course, anything. SpaceLift will pull whatever you need up to orbit for free.”

“Sorry Bill, I need to ask for a little more than that.”

Bill asked in a concerned voice, “What do you need?”

When James finished providing the details of the mission, Bill took a few moments to respond. “I don’t know. I would have to bring it up with the board.”

James said, “There’s no time for that and we need to keep this from becoming public. If word got out, we would have a mass panic. You’re going to have to make an executive decision.”

Business was a game of chess for which Bill hated making hasty decisions. He always liked to predict the outcome a few moves ahead. If all went as planned, they would be able to bring his station and cord back to Earth. With the cord intact, they could drop it down the atmosphere and reconnect to the Ecuador base with little cost. Certainly, it was a huge risk. However, doing nothing meant the death of so many and could put his country on the brinks of collapse. The thought took less than a second. “You’re right. Let’s do it. You have my approval.”

## 30. ECUADOR

The fabric manufacturers that specialized in the use of carbon nanotube threading found better growth than other industries. The applications spanned through each sector, finding their way into various existing products while making new inventions possible: Roofing, siding and other building materials; structural and esthetic automotive components; stain proof carpets and upholstery; even tools for the high adventure enthusiast. The dark, metallic look with a pliable texture made it all the rage with the rich and overweight youth.

Stores were equipped with three-dimensional body scanners and consoles to pick, choose or add your own custom design to clothes that were machine-assembled in just seconds. Extremely popular, was the option to utilize the strength of the fabric to size down or up those parts of your body according to the shape you wanted to outwardly project. Women especially loved leaving their bras behind, allowing the designed structure of their blouse to hold them comfortably in a cup that could conform to any shape of their choosing.

The tug project design included the manufacturing technique for the production of this fabric, as it was used for the tow cord, space suits and much of the structural elements within the tugs. These factories continued to manufacture and store rolls of the material to be sold on the free market, helping to fund the project. Fortunately, the abundant availability of the material made it possible to consolidate a large supply in a short period of time.

The design of the net was simple, but its scale seemed an obstacle that could take weeks to reconcile. Several locations were pitched, but with the largest open square footage and tools needed for the gluing and shaping of the carbon threaded material, Boeing's assembly plant in Washington was an easy choice. With the needed space, staff and secrecy, the whole project took only a day. By that night, a Boeing hypersonic cargo plane, equipped with General Electric pulse detonation engines, was in route for the airdrop over Ecuador.

The massive wings extended as the plane slowed, low over the ground towards the facility. With the aft bay doors open, the ejection of the large parachute yanked on one end of the net, starting the long stretch of the seemingly endless strand. A five-kilometer lay, winding to and fro like supply hose dropped from the back of a fire engine.

Timing was everything. They had to release the SpaceLift ribbon at precisely .44898 (5:46:32am local time) to use all of the orbital momentum in throwing the station towards the approaching asteroid. Even a delay of a minute would put them off course by thousands of kilometers. If they missed the window, the delay of another day would

prevent them from making the rendezvous with Maine-3, leaving them without the help they needed to pull the asteroid off course.

The weave produced a basket that could catch Manhattan, with holes large enough for football stadiums to pass straight through. The team at Ecuador quickly cut the parachute cord and hooked the mount end on the back of a truck. The black webbing followed behind, producing a long wavy line that extended over the field, parking area and through a couple sections of security fence that were removed for the occasion. The driver brought the truck and net up a little past the mount point. The team jumped to work, pulling the net over and clamping it to the much larger lift ribbon. As the release window approached, they took some measure of pride from the achievement. The hotel guests were evacuated, supplies were lifted up and booster rockets mounted for the acceleration towards the asteroid.

With minutes to spare, the team cheered and counted down like a space ship was about to blast off.

"3, 2, 1..." and nothing. The band failed to release and the net remained laid out on the ground. The lead engineer, Pedro Santoro, had worried about this, as there was no way to test the release mechanism that was locked shut for the ten years the space elevator was in service. Pedro ran forward, switched on his electric arc and quickly ran it across the ribbon like a blade. The tension made the fabric sever as if it were being unzipped. He made it most of the way across when the remaining part gave a loud snap and started off towards the heavens. Startled,



Pedro jumped back, dropped the arc and tripped onto the basket roll just as this section was pulled up. The motion flipped him over his head. Instead of allowing himself to fall down and off of the net, his instinct took over, causing him to reach and grab hold. By the time he caught his bearings and looked down, he was ten meters in the air and accelerating. His fear of the height held his grip for the few seconds needed to seal his fate. He changed his gaze upwards towards the endless rope ahead of him. The small crowd watched helplessly, hearing the screams fade before the last of the net was pulled off the ground and up towards space.

## 31. CONTEST

"How the hell are we suppose to do that?" asked Gerard.

Jill shrugged her shoulders. "Beats me, but we have a couple days to figure it out."

Rachael pointed out, "Hey, at least we don't have to do a kamikaze into the rock at a million meters a second."

Tom smiled. "Too bad. I was looking to get into the Guinness book of records."

Jill looked at the gauges. "I'd say we already have."

"Sweet!" said Rachael.

"So I guess Tom had the right idea after all," said Gerard.

"What idea was that babe?" asked Rachael.

"Going around instead of stopping. That reminds me; we never got to settle that bet."

Tom replied, "Sure, no problem. But before I have to embarrass you, let's figure out how to snag that station as it whips around the asteroid."

"Excuses, excuses," said Gerard.

Jill thought a moment. "Maybe it's not so hard. The computer can tell us where it is going to be as it swings

around. We just need to match velocities and catch the hook as it swings past at a hundred kilometers per second,” she finished, showing a confused look.

“Sounds like fly fishing,” Gerard laughed.

“But dude, we’re the fly,” said Tom.

“So, we have to snag that thing with the pod?”

“Yeah! Can’t just toss a line out there and hope for the best.”

“Okay man, but this time I get to tie the knot. That maneuver you pulled last time made me green for a week.”

“It wasn’t from my maneuver. It was you getting yourself bounced off into space,” said Tom.

“I wouldn’t have gone very far if you didn’t knock me in the head with your pod.”

“Oh, so it’s my fault you hooked me to the ribbon and dragged me in by the tether?”

“Well, maybe if you knew how to fly that thing,” Gerard said in a joking manner.

“Whoa! So that’s how you’re gonna be? Okay, let’s settle this. How did you say that bet went?”

Gerard perked up. “It’s simple dude. The one who can walk on his hands more times around the ship before falling, wins.”

“More times around the ship, huh? That sounds easy enough. Okay, you go first.”

Gerard smiled and pulled off his pressure shirt exposing his bare chest. With the engine thrust off and the eleven second rotation producing a half a g, Gerard leaned down and easily bore half his Earth weight on his

hands. Rachael followed Gerard around the tube, amused and somehow turned on by his show of strength.

“Oh, don’t fall baby. You can do it.” Rachael gasped and cheered as Gerard made his first stumble and recovery.

Cursing under his breath, Gerard found himself wishing he didn’t have a cheerleader pacing him. It did feel good, completing the first hundred and fifty meter loop, even though it was harder than he thought it would be. He staggered a few times on the second loop, again getting distracted by the sound effects of his spectator. Two and a half times around and he didn’t think he had much left. Gerard switched his focus to his breathing and lifted his arms around before putting them down for the next step. The movement helped, but caused him to bounce twice between the wall and a console.

Rachael saw Jill as Gerard approached the line where he had started. “You’re almost there, baby. A few more steps and you’ll have three loops.”

Gerard coughed out a “thanks” and struggled on. His leg motion got in front of him and he was too late in noticing to be able to find plumb. In a last push, he lunged forward from his hands and just made it across the line. He got up laughing. “Ha ha! Now just try to beat that,” he said but failed to find Tom around.

Rachael asked first. “Where did he go?”

Jill smiled and pointed up a radial tube.

By the time Gerard used what strength he had left in his arms to climb the tube, Tom had already started around the much smaller loop within the pod bay. “Three, Four, Five, Six, ...” It took little time and energy for Tom

to make it around the twenty-five meter loop bearing almost no weight. He made it to ten, and decided to show off a little with flips pushed up and landed from his hands. He made it to twenty, but his laughter caught up with him before bumping his side on the floor of the bay. He didn't stop laughing even after picking himself off the floor to shake hands with his friend.

“You suck man, you really suck,” Gerard conceded.

## 32. CAVE DWELLER

The sun shone over the walls of the circular valley and onto the silent vessel. Bohem and Akneem shared a meal and concerns over a mission they hadn't signed up for.

"What have we done?" Akneem asked his friend.

"What we were told, I guess," answered Bohem.

"Kulari didn't tell us about this. We blindly answer his call for a special mission without considering to ask what it was about. We can't sit back and allow this."

Bohem nervously looked around to Torakos' sanctuary. "What are you saying? If you do something, he will kill you or both of us."

Akneem shook his head. "He can't kill both of us. He needs one to pilot the tug."

Bohem did not seem convinced. "He is probably in his sanctuary right now viewing the training program. And if he's not, I'm sure he has a plan to torture one of us to get the other to obey."

Akneem nodded. "I didn't think of that. Perhaps you are right."

From within, Torakos sat in meditation. The chime of a message pulled him from his solitude. Slowly, he opened his eyes and touched the icon.

The image of Kulari appeared with a message that was short and to the point. "The children of Shaitan are journeying towards you my son. See that they are not successful in their efforts."

His reply was even shorted. "We will dispatch them, my lord."

Akneem heard a noise and ducked down to look around the tube. Nothing. Leaning over, he whispered to Bohem. "I have an idea. What if we lock out the console with two halves of a password?"

Bohem was frightened by the suggestion, quickly shaking his head back and forth in protest. All of a sudden, he froze his expression and his complexion grew pale.

"You know it would work my friend. If we don't know the others ..." Akneem halted as he noticed Bohem's eyes fixating on an object behind him.

"What are you two talking about?" Torakos demanded, maintaining his gaze into Bohem's nervous eyes.

"We were talking about ..." Akneem started to say before he was cut off.

"Not from you! I want to hear this from Bohem," demanded Torakos.

Bohem took in a breath and formed something that might be believed. "We were saying we don't like you very much."



Torakos believed the lie and let out a laugh from his falsified honesty. "Yes, I suppose you don't. But make no mistake, I am in charge. It should be clear I have no qualms in killing either of you. If you fail to carry out my requests, I will be forced to back up that statement. Do we understand each other?"

"Yes, my lord," Bohem quickly answered.

The delay caused Torakos to turn and meet eyes with Akneem.

"Understood, sir," nodded Akneem.

"Good. I am hoping you will come to appreciate the righteousness of our goal."

Bohem asked, "Perhaps you can explain it to us, sir?"

"Very well."

Bohem's heart sank as he listened to the destructive plans. He didn't want to believe that someone could get away with such an evil plot, but the proof was all around him. The proof he helped to build.

## 33. VESTA

Named after the Roman virgin goddess of home and hearth, Vesta displayed brilliantly in the distance. Brightest of all the asteroids, this shimmering jewel could even be seen with a trained naked eye from dark locations on Earth.

The spectacle failed to portray its true beauty to Nick, who saw it only as a threat. Avoiding active scans that might alert those they sought, Nick closely watched the visible and infrared light from the Sun that was being bounced off Vesta and other nearby objects.

“I don’t see her. Can you guys make anything out?” asked Nick over a secure link with the other two tugs.

“Connecticut-2, we’re not getting anything but Vesta and a few smaller rocks in the distance. Could be they’re on the other side, perhaps in an orbit.”

“Man, she’s bright. There must be a lot of water ice on the surface.”

“If she’s down there, the bright surface will make it harder to find her.”

"That's nine-hundred square kilometers of land. Damn, it's even bigger than my state," radioed Texas-12.

"Then let's get started. Proceed as planned. Stretch out the net and let's hope they're sitting on the surface," ordered Nick.

The two other tugs pulled back from Connecticut-2. They had approached single file for added stealth. The aft ships extended out their tow ribbons from the net that trailed behind the lead tug. The circular net was larger than a tug, with a simple overlay of three cords, giving the appearance of a six-sliced pie.

"Looks good. Just make sure you keep the net off the surface while I drag it around," said Nick, setting course for the long way around Vesta.

Mississippi-2 set her course for the near route, causing the link between them to pull on the other tugs.

"Jay, change course to follow. We're taking the long way around."

"Yo man, it's quicker if we take this way around. We gotta catch them by surprise," replied Jay.

"If they are on the other side, I want to use the sun to obscure their vision of us instead of the other way around. Change course to follow."

"Acknowledged; though I don't see how that's going to matter."

Connecticut-2 crossed the horizon with still no sign of the enemy. "That's a negative on a rogue orbit. Continuing around," radioed Nick.

The asteroid was huge, but not quite large enough for gravity to form it into a perfect sphere; leaving it without the designation of a dwarf planet. However, it was certainly large enough to be a planet killer. Nick stayed low, sticking to the valleys and avoiding the surrounding ridges. He glided over the surface, hitting the throttle just enough to keep them aloft.

From within these valleys, they had a limited view of a landscape the size of a town on a rock that was larger than many countries. The irregular, brain shaped mass provided plenty of places for a tug to hide when observing from such a shallow angle. "You guys getting anything? Our view is limited and this place is littered with craters," queried Nick.

Texas-12 responded, "We can see across pretty far, but we're not picking anything up, yet. It is a problem, though. We have all our screens viewing the surface, but could still easily miss them."

After a sweep across the day side of Vesta, Jay from Mississippi-2 radioed, "They're not here, man."

Nick responded, "Maybe, maybe not. The fact is, we only covered a small stretch across the rock. Come about starboard, a hundred and twenty degrees. Let's run a Victor Sierra."

Jay sounded surprised. "That's a naval search pattern. Where did you pick that up?"

Nick responded, "Seems fitting, being that we are on floating vessels over a rotating surface."

“Quite right, quite right. Okay, roger that. Lead the way and we’ll keep your back.” Jay lifted his finger from the transmit icon and looked towards his copilot. “Taking orders from a freaking land monger. Go figure.”

“It’s your fault Jay, for not speaking up first.”

“Wow, you’re saying it’s my fault that Evan put an Army crew in charge?”

“Yeah man. Those land mongers ran across the line before you even knew there was a race. Ha ha.”

Jay responded, “Yeah, laugh it up, because we’ll see who gets the prize. Pod-A, I want you guys ready to cast off the moment we make contact.”

“Acknowledged, standing by.”

A second pass also produced no sign of the tug, debris or any foreign matter. “Coming about a hundred and twenty.” The short, outside paths of the search pattern skated across the border of day and night.

Torakos’ man, Ghazi, saw the reflection of the metal discs. “Ah, three of them. The more the merrier. We praise Allah and His measure.”

“Turning in a hundred and twenty. Let’s hope three’s a charm.” Nick look across the lifeless landscape. He made it half way, recognizing the familiar landmark he considered the crossover datum. Nick focused on the visual sensors, but caught a glimpse of something on the gravitational scans.

“Hey, check that out. There’s water pockets below the surface.”

“Nice. It’s a like a smaller Ceres.”

Nick found himself picturing the scene in green and blue, as he like to do with the other rocks he visited. Seeing the dead craters instead filled with water and fish, he wanted to be dropping a line and doing that which he missed most from home. His headset could simulate the scene of any of his favorite lakes, but somehow the technology still lacked the ability to mimic the feeling he got from the smell of the pines and the cool breeze on a warm, sunny day. The daydream deepened ...

“I think I have them. Caught a glimpse of a reflection within a crater at this location,” the captain from Texas-12 radioed, using his finger to mark the transmission with a location on Vesta.

Nick broke himself from the dream and set his focus to this location. He watched for a few seconds, flying ever closer, when a small shimmer of light flashed within the mentioned crater. “Confirmed! That’s got to be her.” Nick continued, “Stay low and let’s cover them with the net.”

Jay moved his view towards the crater and back to the open intercom with his pod. “You guys have the location. Let’s take those bastards out!”

“Freaking eh right, man. Opening bay doors.”

“Pull in the slack on the net. Once I cross over the hole, bring the net down, centered on top. We get only one chance at this,” Nick radioed as he brought the tug down to just a couple meters above the surface. “I’ll have the first view of them, so I’m piping my feed into the channel.”

“Got it,” said Jay, watching the close image of the rocky terrain quickly pass by.

Connecticut-2 came up to and passed over the crater. The image that sped by was not what Nick expected. He cycled it back to confirm. “It’s a just pod. Where’s the mother tug?”

Nick expanded the view to see another pod entering the crater. “What’s going on? Who launched that pod?”

Jay replied, “That’s our boarding party. They were standing-by until contact was made.”

“No, they were on stand-by until I gave them an order to go in.” Nick wanted to call them back, but the mission was more important to him than his desire of maintaining strict control. “Mississippi-2A, this is Command. Give me your status and video feed.”

“Command, we’re approaching the other pod. Here’s the feed. You see that? Looks like blood on the side near the airlock. We’re setting her down and going in.”

“Acknowledged. Make sure you go in together, weapons in hand. And give us a feed to your personal view.”

The pilot maneuvered the pod to marry the airlocks. Once they were down and the magnetic seal established, the two man crew opened the airlock and outer door to their pod. The exterior override took and the outer door of the other pod opened, revealing the small pressurized airlock; vacant, aside from the smear of blood on the floor. Hastily, the crew hit the release. The pungent, burning air caused more panic in their souls than the sight of the decaying bodies that were laid out within.



Nick took in the horrific scene and the reaction of the crew with his own expression of bewilderment. “They were hijacked?” he said to himself with the words echoing through his head.

Randy looked over and said, “If so, why would they stick them in a crater? Wouldn’t it be easier to kick them off into space?”

Nick returned his gaze. “Maybe they wanted us to find them.”

“Why?”

The realization changed Nick’s expression to one of alarm. He had just enough time to radio, “Get out! It’s a trap!”

## 34. SPACELIFT

“Florida Command, this is SpaceLift Station. Asteroid in five-hundred-thousand kilometers and closing. We’re inflating the net.” The rolled up package at the far end of the ribbon began to expand. At first, it looked like a five-kilometer tube. But as the gas expanded the rim, the tube separated to look more like a rubber band with a mesh of connecting strings.

As the ring inflated, thrusters on the far end dragged the net and cord to swing out from behind the station. The net slowly moved out to take a position far to the side of the station, closer to the sun.

The rim continued to expand into a circular shape, aside from a small tangle near the side that was connected to the large ribbon. Johnson focused the view to see the frozen form of a man with his arms wide and his hands still clenched around both sides of the rim. Johnson looked down, shaking his head, before tapping the shoulder of his co-pilot to direct him towards the screen.

“Oh God, is that Pedro?”

“Yeah, man. Poor fool held on for his life only to have it taken from him.”

“What should we do? He’s got the net tangled.”

“Nothing we can do, aside from hope the loop still makes it around the asteroid.”

“Wait, look!”

The force of the expanded rim slowly worked on Pedro's fingers until his left hand sprung loose. The net bounced open, causing the body to follow quickly to the side that was still clenched by his right. Once the circle was complete, Pedro was yanked back around by the taut web, snapping off his thumb and sending him spiraling in an orbit to forever circle the Sun in a mummified state.

"God speed, Pedro. You gave your life to save others. You will be remembered."

The two-man crew set their attention back to the approaching asteroid and the alignment of the net. At this speed, even a small space pebble could cut through the ribbon like paper. The same material took over Kevlar for police and military gear, but without the layers needed, a few impacts could sever the line and send the station after Pedro, on a long trip around the Sun. Worse yet, if it severed during a swing, it could send them straight into a fiery grave.

"Florida Command, the net is extended and in position. Asteroid two-hundred-thousand kilometers and closing. Contact in point-zero-zero-three-five."

The team secured in for the swing and sat ready for the five minutes it took to traverse the distance. Johnson controlled the net on his view screen to line up with the asteroid. He wasn't concerned with being able to catch the rock, but with holding on. Even with a perfect grab, the net would only collect half way around. Without the use of a noose, the net could lose its grip, releasing the rock to continue on its path towards destruction. Space mission

failures were a common thing even after years of development and testing. This was thrown together in a day and was now undergoing its first live test.

“Duel thrusters working well to maintain alignment. Contact in point-zero-zero-two.” This metric time scale (based on a day) became the standardized time measure for global companies, multinationals and space missions. While this helped avoid confusion of international days and times, most people continued to use their local, hourly time zone.

“Contact in zero-zero-one. I hope you guys are recording this. It’s going to be a hell of a show.” After another minute and a half, the tip of the rock crashed hard into the center of the net. The momentum of the rim prevented the net from bouncing off the rock, but the sudden pull from the station caused the far side of the rim to start to slide. The tension on the ribbon tightened the noose and grabbed hold of only the first third of the asteroid.

“Florida Command, SpaceLift has caught the ball. Note, we didn’t grab as much as expected, but it seems to be holding. We’re beginning to loop around. I can feel the g-forces increasing.”

## 35. CAVE DEPARTURE

Ghazi engaged the engines, pushing the tug up slowly into the rock that covered the crater in which he was hidden. His remote camera provided an image of Vesta that lay a hundred kilometers away. He watched, as the enemy collected tightly around the grave he had made for the traitors of his land. "Those who chose the path of the infidel will die with the infidels!"

Ghazi gave a twisted smile, contemplating the state of the flesh within the powerless pod, toggling between the heat of the sun and the cold of space. "Yes, it should be a suitable last present for my prey." With the throttle on full, the tug and slightly larger asteroid accelerated well towards the three oblivious tugs below.

Nick radioed the alert and switched the view to easily find the mass quickly filling the sky above them. The engines kicked in, but were slowed by the tether to the other ships. This pulled Mississippi-2 sideways; causing Jay to engage his engines to counter the loss of control. Nick cursed at the tug-of-war and released the lock on his ribbon

roller, feeling the welcome effects of gravity as he accelerated away from the scene. The two Navy tugs remained locked together as the small asteroid impacted. It crashed into the net that covered the crater between them, spewing splintered rocks through their vessels like shotgun pellets.

With a cloud of debris rapidly approaching, Nick pushed the ship sideways and turned the shielding to full. The glancing blow of rock and dust echoed through the ship, but the hull held and the ship's reactor remained on. Nick too quickly gave a sigh of relief, not realizing the last of the ten kilometer tether was rolling off the reel. Nick jumped when the warning widget popped up, giving him a few seconds to engage the motor and attempt to slow the release of ribbon. As the tether reached its end, the rest of Nick's breath was knocked out of him. The loose anchor caused the tug to jolt back straight and swing around towards the other side, yanking up the remains of the rock, net and mangled tugs. The sudden change hit the vessel hard. Nick was left with a beaten crew, debris thrown throughout his ship along with the dead weight of the small asteroid and vessels being dragged behind. They were a sitting duck for whatever the hijacked tug had in store for them.

Randy came to, rubbing his head while trying to turn his attention to his screen. "I see them. They're heading our way. Maybe we should play dead, so we can get them when they're not ready," he suggested.

"Get them with what? And for all we know, they're on a suicide mission," said Nick.

"Yeah, you might be right. So, what do we do?"

Nick replied, "I don't know, but I'm not going to just sit here."

He reversed course, heading back towards the trailing mess. The slack on the ribbon gave him a radius of almost ten kilometers to pilot freely without the weight of any baggage.

Nick watched as the rogue changed course to cut in front of them. "Oh shit! They are trying to ram us."

From the telemetry, he could see their escape blocked between the rogue and Vesta. Quickly, he rotated the tug up past vertical and the oncoming ship. Once in position, he hit the engines to full, trying to cut up in front of their path down. The rogue adjusted her course towards the new path of Connecticut-2, as Nick continued to lean his vessel away to compensate.

Nick shouted, "Brace for impact!" and held his breath as the two vessels crossed paths.

Even an impact of ten meters per second of vessels half the size of an acre could easily destroy both. They were traveling at a thousand.

"Praise Allah! Please accept your humble servant on this glorious day," said Ghazi as he came up on Connecticut-2. At the last moment, Connecticut-2 rotated thirty degrees away. Ghazi cursed and reacted hastily to turn his ship towards their new direction. The course change pulled back the side of the ship that would have impacted them, allowing it to just slide by. Ghazi's frustration for his error was quickly replaced with a smile as his flight path caught the tether between the engine protrusions on the



exterior of his hijacked tug. "I have your leash you western dog," he said and continued to accelerate, taking up the remaining slack.

"They got the tether and are pulling us back," said Randy.

Nick corrected him. "Not pulling as much as sliding across it. However, when they reach the end of the slack, it's going to yank us hard, again. I'm reversing course." When the cord went taut, the jolt caused Connecticut-2 to mildly lunge forward while the rogue was yanked back much harder by the rebound of two masses.

"Hey, maybe we can use that to our advantage. If we can get a loop around them, we can tow them back. We should have more water than they do," suggested Randy.

"Good idea! Let's give it a try," said Nick, changing course to cross the ribbon in an attempt to get in front of them once they slow down. Instead of getting in front, Nick noticed all they were doing was being pulled in by the rogue as she continued to accelerate forward. "This isn't working. We're getting too close. I'm pulling back."

As they started to pull back and away, Nick said, "I have another idea." He engaged the reel, slowly pulling the asteroid towards them both as he maintained his distance with the rogue. Gradually, he increased the speed of the reel beyond the thrust of his engines, allowing his distance to the enemy to slowly diminish.

"What are you doing? You're going to squish us between them and the rock."

Nick looked over and said, "Trust me."

“No, you can’t get away,” Ghazi said as he watched them struggle against his persistent and relentless pull. “Yes, you will come to me and then I will have you,” he spit as he watched them slowly falter and draw near. “Stupid Americans, getting themselves tied to a ball and chain.” He watched as their tug filled the screen. “Yes, another hundred meters. Eighty...sixty...thirty...now!”

“I don’t like this man; they’re right on top of us.”

“Have patience. Wait for them to make their move,” Nick reassured his copilot.

Randy started nervously echoing the distance: “500 hundred meters!” “450!” “400!”

They felt the cord start to go light before seeing the change in the distance.

“Now!” yelled Nick as he brought the engines back to full. The bounce yanked the rogue straight towards them for an instant before Randy released the reel. Nick felt the bounce as the tether released. Violently, he shot the tug sideways under full throttle.

Ghazi reversed the engines at full, feeling the painful but pleasing extra jolt from the pull the enemy vessel made in a useless attempt to escape.

“Kanith!” he cursed as the added pull quickly subsided.

He looked out at his screen, watching the tug tip sideways to reveal the fast approaching, trailing mass. “Ibm haram!” he screamed in panic.

Without time to turn and thrust after his prey, Ghazi reversed the engines again at full. His gaze stuck on the impending collision, wondering if his engines had enough to reverse to the speed of the rock that was bearing down on him. His excitement grew as the velocities of the two objects drew near. Their positions; however, drew closer at a slightly faster rate, causing an impact that produced a jolt throughout the vessel. The water supply, which had run low, was also affected by the redistribution of gravity. The lines ran dry and pumped air through to the reactor, breaking down the chain reaction and sputtering the process to a quick and quiet halt.

Nick saw the impact, but was hoping for something a little more dramatic. "Quick! Let's wrap them up in case they survived."

Randy reeled in the slack to provide a tight loop as Nick circled around the back of the asteroid. It was there they saw the close up remains of the navy tugs, littered with holes and venting their remaining water. "Navy tugs. This is Connecticut-2. Please respond." Randy repeated the transmission twice before looking over to his pilot, shaking his head with a discouraged look.

After Nick completed two loops around, he radioed his pod team. "Are you guys okay? Are you ready to go to work?"

The response came quickly. "You gave us a hell of a ride, but we're ready."

"Good. I'm sending Randy up to join the two of you. We don't know how many they are, but I'll feel better if there are three of you."

Nick nodded to Randy who was already floating out of his seat and towards the radial tube leading up to the port bay. Nick continued, "First thing. Set a clamp, so we can tug them back without the cord letting go. Then gain entry to the enemy ship and take them out. If possible, take them alive so we can find out what we can. This all links back to someone helping them on Earth. Be careful and good luck!"

## 36. LASSO

“Alright man, they did it!” Gerard yelled and gave his friend a slap on the hand.

Tom let out a quick laugh, “I told you Jimmy boy would hook us up.”

After a long sigh of relief, Jill said, “Don’t relax yet. It’s time to go to work.”

Gerard jumped up, ran over to Rachael and gave her a kiss while pulling her in from behind. “Be back in a few minutes, Babe,” he said, knowing it would take longer.

Tom walked over to Jill, looked her in the eyes and said, “I love you.”

Jill smiled. “You do, don’t you?”

Tom nodded and confirmed his feelings in a more physical way before heading up to the pod with his friend.

As he left, she quietly said, “Be careful.”

With the bay doors opened, Tom piloted the pod out and around to hook up the tug’s tow cord to the fast approaching space station. Gerard put his helmet on and

proceeded through the airlock to the emptiness of space. He set the mount to connect the pod to the ribbon, leaving twenty meters for the loop. Gerard gave the knot a quick spin, like a lasso, to open the loop. Without friction, the loop stayed open and unwavering even as they passed through space at a hundred kilometers per second. With the pod secure and the noose set, Gerard worked his way around to the airlock and back inside with his buddy.

“Okay man, we’re good to go,” Gerard said as he took the copilot seat.

Tom asked, “You sure that mount is going to hold? We’ll be flying off into the sun if it doesn’t.”

“Hope so man. I wouldn’t mind working on my tan, but not that bad.”

“I think we’re getting enough radiation just being in this pod.”

Gerard leaned back in his chair and said, “Some say you can seek enlightenment by staring into the sun.”

“Yeah, you do that mister philosopher and all you’ll be seeing is darkness.”

Tom flew the pod away from the tug, drawing out about half of the ribbon. In the distance, they could see the small crescent of the asteroid. The station was obscured by the sun, but Tom could see it following the computer prediction on his view screen. He nodded and set his course for the rendezvous.

“SpaceLift, this is Maine-3A. We’re in position and ready to catch the hook.”

“Roger that, Maine-3A. We have you on our screen. Telemetry looks good. We have the hook extended. Let’s hope your aim is good.”

“You caught the ball. Now it’s our turn to catch you.”

Johnson’s copilot, Edward, looked at this screen and saw the blink of a small object on the radar near the edge of the asteroid. There one second and gone the next, as they started the second pass around the rock. He shook it off as debris kicked off of the surface by the wrapping of the ribbon.

“Contact in zero-zero-two,” said Johnson as he looked down at the screen.

Gerard replied, “Copy that.”

The station came into view as it passed in front of the asteroid. It was like a rock being spun around on a tight string. Just then, the string went loose. The sudden loss of gravity put the expression of panic on Johnson and Edward’s face. After a failed look for reassurance from each other, they set their attention to the instruments and view screen.

“Oh shit!” Tom said, “The ribbon broke.”

Gerard set his eyes on the screen to verify his friend. “What do we do?”

“I don’t know dude, I don’t know.”

“We gotta catch them or they’re dead.”

“Jill, it’s Tom. Reduce speed. They’re going to pass behind us. Something happened to the ribbon.”



Almost immediately, the tug engines kicked in, as the pod continued to race ahead. Instead of slowing, Tom accelerated.

Gerard gave him a quick look. "Where are you going? We have to slow down."

"We can't slow down enough with these thrusters. We'll have to have Jill swing us around to catch them. Jill you copy that?"

"Copy, we'll do what we can. Hold on tight."

The cord tightened and flipped the pod over, as they had planned to be pulled from the other end. Jill pivoted her tug to avoid tangling the cord as she swung them around towards the station. Just as she had a handle on the path of the station, the loop that had slid off the rock became taut and brought the station back into a circular orbit around the asteroid.

Jill radioed, "Tom, they still have the rock. The first loop they made around the asteroid must have slipped off."

She had to thrust back ahead to catch up with them. This spun the pod around even faster, producing about two negative G's. With no hope of catching the hook, she directed the pod towards the station's tether. "You guys are going to have to catch the cord itself. I hope you know how to tie a knot with a pod."

Unable to send a reply, Tom held on and tried to follow Jill's course towards the station and its cord.

The maneuver confused the artificial gravity system on the ship and reminded Jill of the simulators back home; spinning in three directions while not knowing which way was up. She felt nauseous, but had little choice but to keep focus. "Almost there," she heard herself say.

The two cords met and sent a shock wave to each of the vessels, especially the pod. Tom had no time to regain composure after the impact. He hit the thrusters to increase their spin around the larger ribbon. He could feel the pod being pulled back violently off of the cord. His only hope was to complete a couple loops around the receding tug cord and use the thrusters to keep the “knot” from unraveling. Tom heard the vibration caused by the fast slide of the thin ribbon across the larger. In his mind, he could see either the severed paper cut of their cord or a deadly impact with SpaceLift station.

Jill reversed the engines and provided more slack in the cord to lessen the impact, but it still came. Tom’s loops pulled tight around the ribbon as the pod slammed into the belly of the station. Johnson was jerked by the impact and the listing of his vessel by the tension of the cord around towards the tug.

“Station to Pod-A, you guys okay?”

“We’re banged up a bit and a little dizzy, but we don’t seem to be leaking air. What the hell happened, anyway?”

“Not sure. We had a good orbit, laying our cord around the center of the rock, but somehow it slipped off.”

Edward added, “I think the cord rolled off a large bolder which bounced it into space, because I saw something off the surface on radar.”

Jill joined the conversation. “You saw something on radar? Where was it? What did it look like?”

“It was just a round blip off the surface around the other side.”

“Please bring up the image so we can take a look.”

It took Edward a moment to cycle the radar data back to magnify the blip. From a distance, it showed a small round dot over the irregularly shaped asteroid. But where you would expect the round lines to show imperfections of gravel, ice and rock as he zoomed, the revealed image was that of structure; one very recognizable structure.

“Oh God!” at least two of them said.

## 37. BOARDING PARTY

The hijacked tug lay silent on the dusty surface of the small asteroid that circled Vesta. Harry landed the pod next to the port that was partially covered by the tow ribbon. John and Randy donned their helmets before leaving the pod to gain access to the disabled tug. Randy set the clamp and turned to John to address his headset via inferred. "Okay, the ribbon is secure. Now all we have to do is find the hatch lever."

John ran his hand along the ribbon. "Got it," he said, peeling back the ribbon that covered part of the port hatch.

Randy reached down with his free hand, twisting the mechanism until he felt it respond. "Okay Harry, we made access."

"Copy that, I'm coming out."

Randy poked his makeshift spear through the opening bay door to find no resistance on the other side. As soon as it was open enough, John used his grab on the ribbon to pull himself head first into the small circular bay.

Randy and Harry also floated through the hatch; the later hitting the button to close the door and pressurize the

empty bay. John removed and discarded his helmet pack. Randy gave John an uncertain look.

John recognized his concern and said, "It's only going to get in the way when we find them."

The words echoed through the emitter on Randy's pack. He responded with a simple nod and the act of discarding his own helmet. After doing so, Randy turned to see Harry doing the same.

"You hear that?" asked Randy.

Harry responded first. "I don't hear anything except the pressurization of the bay."

John also looked over at Randy with a curious look.

"The reactor is off," said Randy.

Harry nodded. "I'm surprised I didn't notice."

"So, what does that mean?" asked John.

"Well, it means life support is on battery backup until we can give this thing a jump."

Harry put his hand up to take control of the conversation. "Let's worry about securing the vessel before getting ahead of ourselves."

"Okay, stand ready. I'm opening the radial tube hatches," Randy stated as he pressed the button.

Each of them stood by a separate hatch, prepared to meet whatever force might try to push through: Nothing. "Okay, now what?" asked John, looking over to his pod pilot for guidance.

"Three of us and three radial tubes they might use to escape. We jump down separate tubes and converge on them," said Harry.

Randy motioned to the blood stains in the bay. "We know they have effective weapons, perhaps better than ours. I would suggest two of us take a single tube down to offer a more defensive attack and one stay back to protect the bay and our pod."

"No, full offense is the best defense. Let's go, now!" Harry commanded.

Randy and John obeyed, pulling their weightless bodies through the tubes towards the crew torus. Randy stopped at the last rung, shooting his head back and forth to take a quick survey of the adjoining part of the torus. Before he had a chance to convince himself the section was clear enough to fully exit the radial tube, Harry and John already shouted a "clear". The sound of the words around the tube caused him to accelerate his pace, echoing back "clear" before he had a chance for a complete review.

Ghazi, who was hidden in an above cargo store, used the signal as an invitation for his attack. He quietly flew from the compartment and found the mark he sought with his blade. The sudden expression of pain showed on Randy's face. His mouth opened, but he had not even a last breath to output a warning.

Without rotation, Harry floated weightlessly around the torus, meeting up with John halfway around one of the sections. Both quietly shook their head. Harry motioned for John to head back in the direction he came. Harry was already turning to follow his own orders when he heard the spinning of the port bay tube doors. Harry shot a look back to John who was doing the same at him. The brief

exchange was quickly followed by a race back to the radial tubes they had entered through.

Harry reached the bay, but the panel failed to immediately respond due to the vacuum now present on the other side. Realizing he needed to warn Nick of the potential threat, he shot back down the tube to make use of the nearest console. He touched the screen, but it displayed only with a password request. Alarmed, he jumped several meters to the next console with the same response.

“The helmet packs!” he said to himself, and returned back to the same tube he had already traversed twice. By the time he made it up, the bay was pressurized and the large ball valve was beginning to open. As soon as a gap was present, he squeezed through to find John doing the same on the other side of the bay.

Harry looked around. “Shit! They took our packs.”

“Oh no,” said John.

Harry looked at John and said, “Where’s Randy?”

John shook his head. “I didn’t see him.”

“Damn!” Harry said, thinking he should have listened to him. “Let’s go,” he said diving down the tube that Randy had traversed.

The surface tension of the red pools formed them into floating spheres, as if they were wax inside a lava lamp. Harry and John watched the small blobs drifting around Randy’s body.

After several seconds, John asked, “What are we going to do?”

Harry looked over at him. “I don’t know man. Even if we had water, we can’t start the engines without a jump.



We have no pod and we have no helmet packs. Shit man, we don't even have access to the consoles to send out a message; they're locked."

With eyes wide, John turned to the nearest console and touched the screen, bringing up the password request. "How are we going to warn Nick?"

## 38. AKNEEM

Torakos drifted around the tug to the control console. "Take us up and reengage our gravity. We have a task to see to."

"Yes sir," obeyed Akneem.

"Bohem, prepare the weapon."

"Understood, my lord."

Akneem engaged the engines and produced a small cloud of dust as they left the crater. "You fool! Are you trying to give away our position?" shouted Torakos.

"No sir, but the ground is very loose. What else would you have me do?" said Akneem in defense.

"What I will do is take your head if they discover us. Stay low and head towards the far side while we search for their location."

"If they are coming from Mars, we have the Sun to obscure their vision," suggested Akneem, trying to be helpful.

"You idiot! They have radar, which is not obscured. Something we cannot use lest we want to broadcast our position. And unless we are directly in line with the Sun,

they will see the reflection off of our shiny metallic exterior.”

Akneem opened his mouth to speak, but before the words came out, Torakos shot his hand up to demand silence and to offer a second warning.

Remaining quiet, he attended to that which he could control: the vessel. It was a delicate maneuver, staying close to the surface of the rotating asteroid without stirring up a trail. They neared where day and night abruptly change, with the edge of the tug flying just a few meters over the surface. Out of the blue, the asteroid’s spin suddenly changed. Unprepared for the small jolt, the new motion brought the rocky surface into the leading edge of the tug before Akneem could respond. The light impact was amplified by the rotation of their vessel. Fortunately for Akneem and his copilot, the restraint kept them adhered to their seats at the controls and able to prevent the torque of the impact from bouncing them along the surface like a giant wheel. Torakos, who had been standing freely, collected himself off the floor, drawing a blade.

Bohem quickly defended his friend. “Sir, it wasn’t his fault. The asteroid moved. It must have been hit by something.”

Torakos stopped his motion, but continued to hold and twist the knife in his hand. “What do you mean? Hit by what?”

Bohem returned attention to his console to see if it provided any more information and found none. “Sir, I don’t know.”

"It wasn't an impact, it's being pulled around," offered Akneem.

"And how do you know that?" demanded Torakos.

"Because sir, the asteroid's rotation continues to accelerate."

"Are you saying they already laid their cord around and have it in tow?"

"I don't see how sir. We would have seen either them or the tow cord."

"Then bring up the telemetry so we can use this change of motion to determine where they are."

Bohem brought up the three dimensional image which provided a color change to indicate the region of greatest acceleration. It showed their position and the far pole in the brightest color.

"It appears they are pushing and not towing. Come about and head back towards the opposing pole. We know their position. Accelerate to a quarter thrust. We will use the weapon before they have a chance to know what hit them," commanded Torakos.

They traversed the distance quickly, but instead of a ship, they saw a massive net collected around the far side of the rock.

"Do we shoot the rim of the net, sir?"

"No. Even if our three spikes are enough to sever that band, the other sections of the net would tighten and cling to the asteroid," Torakos said as he contemplated the situation.

“That net was sent from Earth. Proceed around. I want to know what it is connected to.”

Akneem turned back to his console and brought the tug in a tight orbit around the asteroid pole that was now covered by the unnatural lattice. The far side of the loop was pulled tight through a large slip clamp. The two strands led out a half kilometer where they were connected to a much larger strip of fabric. The strip was laid out around and disappeared over the horizon.

“Very clever,” said Torakos, inadvertently showing his respect. “Come about, quickly. We need to find a crater near the far side of the net.”

Akneem showed a confused look, but quickly obeyed and circled around to set them quietly down in a hole near the opposing rim.

“I’m sorry sir, what are we waiting for?”

“Why, we are waiting for the lift.”

Akneem’s confusion was only deepened by this response, but was afraid to show his ignorance. Just as Torakos expected, the wide fabric cord, which extended out to infinity, came around and covered part of the hole in which they hid.

“Do we have anything that can cut that?”

“If that is what I think it is, then no sir. Without much tension, it would be easier to cut steel.”

“Then we better push it off before it blocks us in here. In fact, push it up and over enough to have it slip off the side of the asteroid. If we time it right, their motion will fall straight behind the asteroid. The sudden tension on the cord should be just enough.”

“Just enough for what, sir?”

“Just enough to kill them you idiot.”

“Understood, just tell me when, sir.”

“I’m not the one with the computer console and telemetry on their craft. Calculate the time they will reach the far pole and push the cord off the side of the asteroid, accordingly.”

“Understood.”

After months of fear and abuse, with a void of joy and purpose, Akneem began to see Kulari’s “righteous goal” as the evil he preached to destroy. The pilot looked down and ran the equation, giving a glance to his friend, who was watching the procedure. Prematurely, he set the tug up into the fabric, balancing it until they cleared enough of the asteroid to push it off the side. The slide of the ribbon off the side of the tug caused the vessel to list a little back towards the asteroid. Akneem could have easily overcome this motion, but it suggested a resolution to the madness that quickly made complete sense. Instead of turning up and away, he engaged the engines to crash them into surface.

Bohem looked over at his friend in confusion. The realization of his friend’s intention triggered a dilemma within that he wished he had more time to examine. Instead, his instinct kicked in as he made an effort to stop the engines. Power was cut just before the impact with the loose surface.

Torakos had time to brace for the impact, but was still sent flying into a console. The collision left him floating unconscious, with his knife wedged into the wall. Akneem quickly disengaged the restraint on his seat and made a jump

over his friend and towards the weapon. Still running on adrenaline, Bohem shot his hands up to redirect the man's motion beyond the console. After unhooking himself, Bohem moved to grab the knife first as the other was jumping back from where he fell to do the same. Akneem's motion brought him into his friend and the knife he held in defense. Akneem got off the words "Stop this!" before becoming limp in his arms. Having no time to understand the events around him, Bohem sat their crying in grief and anger looking at the blood on his hands and the lifeless expression on his friend's face.

Torakos awoke and regarded the scene. He moved over and yanked the knife from the body before asking, "What happened?"

"He tried to kill us," was all Bohem could muster.

"What is our condition? How long was I down?"

"I'm sorry sir, I don't know. It wasn't long. It all happened so quickly."

"It is just as well. I should have killed him myself for his incompetence. Now man your console so we can confirm the fate of the others."

"Sir, I think he pulled the cord off too soon."

"What! When did you know this?"

"I am not sure, sir. I was trying to confirm my calculation when he turned the ship to crash us."

"Show me your predicted telemetry of their vessel."

The plot came up and showed them passing around the far pole and looping back in their direction.

"So be it. Move to intercept. We must take them out before they have a chance to move the asteroid."



## 39. NICK

Ghazi saw the tug hovering close by with its bay still open, like the arms of a mother waiting to receive a devious child. “Allah has blessed me with a path home. I am forever your servant as you continue to lead me to do so.” He smiled with the words leaving his lips. His approach of the port bay felt like a bed laid out before him with a waiting virgin. He guided the small vessel through the opening, gentle as if entering a womb. The thought warmed his blood. He drew his blade and recalled the memories of its usage. The days of his training, the campaigns in the mountains of Pakistan, the executions of his enemies in India, the two from the tug he and Torakos hijacked a couple months prior, to the helpless American just a few minutes before. The blade was meant for his hand and his natural skill gave him authority over the weak and power over the hearts of women.

Nick held Connecticut-2 less than a hundred meters over the hijacked tug. His eyes focused on the screen and his ears on the conversations coming over the helmet packs. Hearing the argument over the course of attack, he

chimed in, "I agree with Randy. Hold one man back and have the other two stay together."

Harry's orders echoed back and Nick realized they didn't hear him.

"Wait!" he shouted out with no response. He exhaled, leaned back in his chair. "This better work."

He heard the three faint 'clear's, and breathed a sigh of relief. The words continued in his head. "All clear? That doesn't make sense. Where are the hijackers?" He leaned forward, staring at the still view and the absolute silence from the microphones. It started with a couple faint taps. Nick knew the sound which followed to be that of the bay doors closing.

"Are they coming out already?" he asked himself.

He moved his hand up and touched the transmit icon, drawing in a breath to output his query. The sounds of grunts and breathing from the other end caused his delay. There was something foreign within the sounds that gave Nick pause. The faint Arabic whispers that followed brought out a surge of anger that almost got the best of him. Nick closed his mouth without unleashing the verbal attack and pulled his finger from the transmit icon. Listening carefully, he heard nothing more. Half realizing he was still watching the screen, the movement of the bay door opening snapped him out of his focus on the radio. He zoomed in and saw the top of a man carrying a couple extra packs to the pod.

"Only one? Did they catch the others? Damn, why did they remove their packs?"

Nick continued to watch the screen, wondering what to do. He put his finger over the port hatch icon, but pulled back, realizing this would alert the hijacker to his presence being known. The pod slowly lifted off and headed for Connecticut-2. Nick half expected the bastard to accelerate hard and crash into his tug. "Should I let the pod dock? Would he use it to gut us from the inside?"

"Think! Think!" Nick commanded himself. "No, he'll try to take the ship. At least I can only hope," he realized, knowing he needed a working pod to retrieve his crew. "Okay scumbag. You want to try to take my ship? You're going to have to take me on first."

The pod docked and the port bay door closed before pressurization. Nick increased the rotation of the tug to produce the full force of Earth's gravity; twice what was considered typical. Being short and stocky, Nick liked the true feel of his weight. His young crew offered few complaints, even the tallest one Randy, who recognized the dizzying effect of the faster centrifuge as he traversed the torus. Nick increased the rotation each time he trained and the mind set gave him a feeling of confidence. During his youth in NYC, his Chinese instructor inspired him to seek not only external strength, but that within. He learned that the arts were as much a means of spirit as of self defense. On the tug, he trained to adapt his style and modify his favorite weapon to cater to the enclosed environment.

Ghazi completed the docking procedure and evacuated the pod just before the radial tube doors rotated open. He stood ready, locking his feet in the holds to provide

leverage in the direction of any of the three access doors, leaving a hand free to wield his blade. A silent disappointment followed. "Shame. I had hoped for a true opponent, not a coward hiding in the hollows." He unhooked his feet and jumped across down the tube he had the best view of. The same mode of travel he had used many times before, but this time something was different. He panicked at the descent speed, using both hands to catch himself on the rungs. As he recovered, he heard his blade bang down the tube to the floor below. In haste, he climbed his way down the tube, jumping to the floor before checking for occupants. Nick was already running at full speed, hitting Ghazi square in the chest with his shoulder.

Ghazi went down hard. Nick continued over the top of him, landing in a roll and recovering quickly to his feet. Ghazi got up slowly, glancing back to see his long blade five meters to his rear. Instead of moving to retrieve the weapon, he spoke with a deep accent. "You should have gone for the weapon. Now I will kill you and use your vessel to further our goal of laying waste to your people and culture. With the help of our other tug, fire and brimstone will rain down on your ungodly cities. We will see to the birth of a new Islamic Earth! Our terror will conform the masses." Ghazi barked out a laugh. "Ha, terror-form!"

Nick smiled, and put on his best poker face. "You're going to find that a little hard without the password."

Ghazi grew an angry expression and turned to face the console. He touched the screen and to his surprise, the full controls became visible. The blow hit his jaw and snapped his head back. While Ghazi stumbled backwards,

Nick thrust a side kick with his left foot into the solar plexus of the other. The motion sent Ghazi crashing backwards into the torus wall.

Nick used the few seconds he had to turn to the console and engage the lock, cursing he hadn't done this before. As he turned back, he saw that Ghazi was still down with his hand in the process of grasping the hilt of his short sword. Nick pulled out his own weapon, the one he had taken the time before to retrieve. He lashed out the abbreviated three-section staff like a whip towards the extended hand of Ghazi. The end pole gave a loud clank, hitting only floor as Ghazi rolled away with his blade now in hand. Nick shuffle-stepped forward, maintaining his low stance, and aimed a kick to Ghazi's abdomen. The blow hit, but the impact was reduced as Ghazi continued to roll in retreat. Prepared for the next kick, Ghazi used his sword to block the foot, cutting through the fabric and skin above Nick's left ankle. Nick stumbled only a moment before shifting forward his right foot to broadcast another kick. Ghazi brought his sword down again to defend as Nick used the opening to land his staff across the other's head.

Infuriated, Ghazi stopped rolling, placed his feet and sword towards Nick in a defensive posture as he lay on his back. He offered a motion to speak, but instead threw his legs behind him to roll over his head and into a standing position. Nick was already moving, shifting to a two handed grab of the opposing staffs near where they connected to the center staff. Like wielding two swords, Nick swung from the right and then left, which Ghazi blocked

while giving ground to recover. Nick let go of the left staff, allowing it to circle up and around as he shifted forward. Nick quickly spun around to camouflage the attack and increase its power. Ghazi, who had halted his retreat and was raising his weapon to strike, did not recognize the path of the staff's rotation until it was too late. The impact ruptured his left testicle and removed the strength from his knees, causing him to involuntarily fall to the floor once more.

Knowing all too well that the disabling effect of a groin strike is short lived, Nick continued his rotation, drawing the chain of staffs around in a horizontal path. The strike caught Ghazi on the wrist that was already shaking under the weight of the weapon in his weakened state. Ghazi let out a scream as his arm snapped and weapon fell to his side. Under duress, he forced himself to lean over and reach for the weapon with his left hand. This resulted in a second scream and broken arm.

Nick moved around the weak and disabled man, wrapping two sections of the staff around his neck. Like pliers on soft tissue, Nick needed to only apply a little force to obtain the desired effect. When the cries subsided, Nick started asking his questions.

## 40. SPACE TANK

“Jill, start towing the rock into a lower orbit before those bastards do something.”

“Tom, are you sure that knot is going to hold?”

“No, but we have no choice.”

“Okay, hang on.” With that, Jill lit up the engines. She pulled slowly at first and then gradually built up to full throttle. The effort worked to tow the rock and reduce their orbit, using their circular energy against the asteroid’s course towards Earth.

Rachael excitedly said, “We did it!” as the spike crashed into the mid section of the ship and through one of the primary engines. Air escaped up the neighboring radial tube, causing the bladder between the pilot and co-pilot consoles to inflate. The ship’s automated systems responded, sealing off the venting pie section of the ship where Rachael sat.

The lost engine caused the tug to violently wobble and randomly dart from one direction to another, preventing the second spike from hitting its mark. Unnoticed by



Jill, who was working to regain control and ascertain the fate of her friend.

Torakos did take notice and struck Bohem across the head. "You fool! We have only one spike left and still two targets."

"But it wasn't me sir. You said fire, so I fired. The computer failed to track their erratic motion."

"You should have anticipated that! Close the distance. You better pray you don't miss, again."

"What the hell are they doing?" Tom complained to Gerard as they felt the wobble down the cord.

"Jill, why are you shaking us?" he continued, with the transmit icon depressed.

"Tom, we've been hit by something. Rachael's in trouble. The ship lost compression in her section and the bladders sealed it off."

Gerard disengaged the seat restraint and fell towards the ceiling of the pod. He gained his balance, grabbed his helmet and jumped towards the airlock.

"Gerard, make sure you tether yourself. If you slip off ..." was all he got off before the airlock closed.

Gerard climbed around, locking his legs with the pod stand. "Damn!" he said, seeing that the ribbon would unravel if he removed the clamp. He set to work on the loop he had made, which now hung loosely in space. As he started to untie the Canadian-eight knot, the station jolted sideways, causing him to lose his grip and slide off into space, away from the now much slower orbital motion of the vessel chain.

Johnson sat, suctioned to his seat, coping with the lateral gravity within the non-rotating station. He felt the tug's motion and looked to his screen to see Maine-3's strange maneuver. Tom beat him to the query, but Jill's response triggered a different emotion. Johnson was immediately overwhelmed with the feeling of vulnerability. "Oh God, we're sitting ducks." He looked at the screen and found the approaching doom. In a fit of panic, he hit the engines to move them in and away from the rogue's course.

"SpaceLift, cut engines! Cut engines!" Tom demanded. "You knocked my partner off into space. Do it! Do it now!" An absence of acceleration followed, which Tom took as a cue to don his helmet and pop open the airlock, tethered to a thin cord. "Think man, think!" he said looking at the clamp, loop and strands of ribbon wrapped around the other that kept the chain together. "Damn!" he said, and finished untying the knot halfway, using it to make a quick tracer-eight around the larger ribbon. Wrapping his hand a few times around the tether, he opened the clamp and felt the remaining gravity wash away. The pod scraped off the edge of the station, falling through the dead of space in the direction of the Sun.

Jill cut the engines, unbuckled and climbed up the radial tube to the port bay. She grabbed two helmets, putting one over her head before entering the airlock that led to the damaged section where her friend lay. The interior of the large ball valve held tubes that formed a T, providing either a throughput between two pressurized rooms or

a lock to traverse between air and vacuum. Once within, she hit the switch and felt it rotate horizontally 180 degrees. The noisy release of air into the tube troubled her, but did not cause hesitation from her head first dive towards the torus below. She hooked the second-to-last rung with her free arm, feeling the arm pull loose from the socket. She let out a cry, but managed to pull it free and land on the floor of the now atmosphere deprived section of the ship.

“Sir, they are flying still, again. Should I fire?” asked Boheem.

Torakos responded, “No, they are obviously venting. Let them suffocate in the vacuum of space. Turn to the station and prepare to fire.”

Tom pulled himself into the airlock via the tether and jumped to the pod’s pilot console. “Hang on Gerard, I’m coming to get you.”

“Leave me and save the girls.”

“Not a chance dude, I can do both and need your help to take on those bastards.”

“Okay man, just make it quick.”

“Where the hell are you? Oh shit, right, the beacon ...gotcha!”

Tom quickly maneuvered the pod to collect his friend before the vessel chain rotated out of range.

Edward saw the rogue come about and screamed to his pilot, “Oh shit, here they come!”

Johnson didn't wait to confirm the threat, immediately setting the engines to evade in a random direction. His weak engines, further reduced by being strung between two points, provided little evasion from the full measure of a tug.

There was the lightest resistance of air that was held to the floor by the artificial gravity within the tug. It was there where Jill found Rachael, lying unconscious. Jill pulled her head up and worked the helmet pack over, sealing it with the neck rim on her pressure suit. However, when she lifted her up and over, her eyes were blood filled and bulged out of their sockets.

"No, you can't leave me," Jill said as she pulled Rachael up in her good arm. As Jill held her and cried, Rachael drew a sudden intake of air. Tears burst out of Jill's eyes. "Baby, you're okay!"

Rachael managed to say, "I don't feel okay."

"Well, you look even worse, but we'll get you fixed up," Jill said, reassuringly.

"What happened?" asked Rachael.

"I'm not sure. Something hit us and took out one of the engines."

"Are the other engines still on?" asked Rachael, feeling a shutter in the motion of the tug.

"No, I don't know what that is," said Jill, helping Rachael back to her seat and switching her attention to the external viewer. She zoomed the view down the cord to the station. Her mouth dropped open as she helplessly watched the rogue bear down on SpaceLift.

Tom maneuvered the pod next to his friend, who grabbed hold and made his way into the airlock. "Welcome aboard."

"Good to be aboard. Now let's get the girls."

"Way ahead of you dude," Tom said feeling the acceleration of the engines he controlled.

Gerard sat at the copilot's seat and drew the zoom back to see a disk like vessel moving across his screen towards the women, whose tug was now idle. "Shit! Those bastards are heading for the girls."

Tom looked over to confirm the threat and noticed their direction changing. "Wait, they're turning towards us ..."

"Good, let's ram them," Gerard shouted.

"No, it looks like they are heading for the station."

"Tom, sneak in behind them. Let me try for the airlock."

"There's four of them dude. If we can get in, we gotta go in together."

"Are you forgetting that time in Virginia Beach when I took on those four guys?"

"Yeah, I remember. I remember you getting your ass kicked until I stepped in."

"One punch to the head is not 'getting my ass kicked', and I remember you stepping in against the smallest one."

"Well, he was the closest to me."

"Look, they're slowing down, now's our chance."

As they approached, Tom and Gerard saw a flash streak across the path from the tug to the station, blowing a large hole in the command section. The image showed

debris flying from the station, including two flailing bodies that quickly drifted away in unmoving silence.

In his most determined voice, Gerard said, "I'm going to kill those bastards!"

Tom reassured his friend, "You're gonna get your chance," as they approached the underbelly of the rogue.

Jill transferred control to a backup console on the damaged section of the tug. Instead of using the engines, she engaged the motor to reel in the ribbon. As the tug quietly drew closer to the rogue and station, she saw the fate of SpaceLift's crew unfold.

Her gasp drew concern from Rachael. "What happened, what do you see?"

"They shot something at the station. My God, they have a tank, not a tug. How are we supposed to fight that?" Jill thought out loud.

"Oh shit!" was all Rachael could think to say.

"Oh no, it's Tom and Gerard."

"Where? What are they doing?" asked Rachael.

"They're going after them with the pod."

"Are they crazy? Call them back," said Rachael.

Jill fought her emotion and thought a moment. "Wait, if they can get in through the airlock, they might have a chance to stop them."

Tom brought the pod within a meter of the rogue's port hatch. Gerard was already through the airlock, jumping off the pod towards the manual hatch lever. He grabbed hold of the lever and sought another anchor point needed

to twist the mechanism. Suddenly, a glow erupted from the engines around him and nearly yanked his grip free as the tug accelerated. The vessel thrust around the vacant station and headed back towards the asteroid. Gerard was bumped and thrown from side to side as the tug maneuvered, but he managed to maintain his now two-handed grip of the lever.

Tom was thrown around in the pod that rocketed away from the tug exhaust. The hot plasma sprayed over the aluminum shell that shielded Tom and the fuel tanks within. With the hydrogen container heating dangerously, the pod's growing distance and rotation diluted the effect of the tug's outgassing. Tom collected himself from the corner of the pod and pulled himself back into his seat. He put in a pursued course and radioed on a private channel. "Dude, let go now and I'll be able to get you."

"No way man. Head back and get the girls. Once they stop, I'm going in to take care of these assholes."

Tom disengaged pursuit knowing it was their best hope. "Okay, but you're nuts. Grab something from their port bay as a weapon, maybe a wrench if they have one."

"Way ahead of you man. Gonna grab a meter pipe from their storage."

"You're not going to have much time. Once you open the port, they'll either hear it or see the status warning on their console."

"I'll have time. Just get the girls."

"Alright Gerard. Good luck. Out."

Tom looked down seeing he was already on reserve. "Damn, I hope I have enough," he said to himself. He



came about, confused to see Maine-3 much closer than he expected.

“Did you miss us?” Jill radioed over.

“You know I did. How’s Rachael?”

“She’s stable, but beat up pretty bad from decompression.”

Rachael broke in with a, “Hey!”

Jill smiled over at her and continued. “We lost an engine and pressure in one of the three sections. Luckily, the water container and reactor don’t seem to have been breached.”

“Thank God. I’m coming in. We have to go after Gerard.”

Rachael freaked. “What? Where’s Gerard?”

“He’s playing Batman, hanging on the port access lever of the rogue.”

“You let him do that? There are four of them. Why the hell didn’t you go with him?”

“I was heading out to join him when they pulled away.”

“So they know he’s there?”

“No, I don’t think so.”

“You don’t think so? How can you say that?”

“Because they didn’t accelerate that hard. They could have easily shaken him off.”

“Okay, maybe, but we have to go after him!” Rachael said.

“We will, we will,” Tom assured her, “but we have to be careful. If they see us before he has a chance to get in,

they might accelerate hard to evade or intercept us, shaking him off.”

Jill broke in. “What’s more, they have a weapon and we don’t.”

Tom thought about what he saw and wanted to know more about this weapon. “Hey Jill, I’m sending you my view of their weapon strike. Tell me what you think while I dock.”

“Okay, but first I need to get Rachael to the other section. Keep your helmet with you in case they hit us again.”

Bohem maneuvered towards the asteroid, understanding the job ahead would redirect the rock to kill millions. Like a drunk stumbling home, Bohem found himself working on autopilot, unable to get the image of his friend and station crew out of his head. “How can this be right?” he quietly asked himself.

“What are you mumbling?” asked Torakos.

“Nothing, sir. Just checking our water and the course of the asteroid. How do you want me to hook to it, sir?”

“Why, they so nicely wrapped our present with a ribbon. Let’s pick it up from there.”

Bohem circled around the far side of the rock. A bright sparkle appeared over the horizon. He hesitated a moment to contemplate it drawing near. The light from Earth glowed like a perfect blue jewel, forming a small shimmering cross. The words of friendship and forgiveness from James Kennedy echoed in his mind, producing a simple solution married to an overpowering feeling of absolution. He felt free of the yoke that bound him and

gave thanks for the realization, no matter the consequence to his physical being. Bohem whispered, "Forgive me," as he cut the engines, engaged the lock and echoed the Arabic word for 'friendship' twice before the screen went black.

"What are you doing?" demanded Torakos.

Bohem disengaged the suction restraint, stood up and turned to face the larger man.

"I will help you no longer."

Torakos gave him an angry slap across the face. "You will do as I say or you will die!"

"I am already dead. Perhaps I can save my soul. Nothing you can do or say will change that," he responded as he turned his face to expose the other cheek.

Torakos took the invitation, but the feeling of control was vacant from the deed.

"You take me for a fool?"

Bohem just stood there and offered no response.

Torakos smiled and touched the screen. A password request appeared. But instead of the temporary code that Bohem had just entered, Torakos quickly typed in the overriding master password that he had kept hidden from his ill fated crew.

The controls came to life. Torakos turned to the disappointed man and said, "You see, it is you who is the fool."

From above came an unexpected sound that coincided with an alert on the console which indicated, "Manual port hatch engaged."

Torakos turned back to the screen and reached his finger for the override. Bohem swung his right arm up under that of his disavowed master, knocking the hand away from the controls and exposing the side of his abdomen. Bohem quickly followed with his left, planting a fist to the rib cage that offered some protection to Torakos' kidney. Torakos groaned from the strike, but managed to swing his arm back towards the head of Bohem. The telecast of the strike gave the other enough time duck under and swing a right hook to the jaw of Torakos. The larger man stumbled and landed on his back. Bohem quickly leaned down to grab the knife from Torakos' belt. Prepared for the action, Torakos retracted his knees and thrust both feet into Bohem's gut. The motion sent Bohem a couple meters around the tube, smashing his head into a console seat. His body was left still and in an unnatural position.

Gerard worked himself into a sitting position with his hands held firm on the lever between his legs. His arms and especially hands were getting tired from the grasp, but the position helped him from getting tossed side to side. He felt confident that he could hold on, but his helmet pack provided only a half a point charge (about an hour) when full. With the one-third vibrate alert already active for a few hundredths of a point, he knew he only had about ten minutes of air left. He sat there, focusing on his breathing. The quiet meditation initially prevented him from noticing the change in motion. He opened his eyes to realize the lack of gravity. "The engines have stopped," he said and quickly turned the lever between his legs.

He cursed at the delay of sealing and depressurizing the port bay before the hatch finally opened. What took about ten seconds, seemed like an eternity. He pulled himself through, half expecting a man on the other side ... nothing. He hit the button to close the hatch, thankful now for the same delay it took to repressurize. He used the time to jump across the bay and over to the supply cabinet. Thinking to cross his fingers as he popped open the door. "Yes!" he said and grabbed the stiff carbon tube. With adrenaline surging through his veins, he removed his helmet pack and crouched between two of the radial tube doors. There he sat, poised and ready, directly across from the third. The three airlocks opened slowly together. Gerard shot glances towards the tubes to each side. Instead of waiting for someone to appear, he tossed his helmet down the tube to his right and jumped across the bay down the third. He was happily surprised to have a clear path ahead with no commotion coming from the port, aside from the tumbling helmet. The lack of response bred confidence, but he was not about to stop and wait for them to plan their defense against him. With his free hand, he grabbed a rung to spin around before landing feet first in the crew torus. The first survey was made with his staff, striking anything that could have been there to meet his attack. Again, nothing. Nothing but the sound of his breathing and the pounding of his heart.

Darting looks back and forth, he started a sideways traversal of the tube. He slowly shuffled his feet a quarter of the way around until something caught his eye that gave him pause; a hand. He shot another look back before

crouching down to see past the curved ceiling that had blocked the view of a body sprawled out across the floor. A still, dark red stain covered his chest and the floor nearby. Aside from the body, all seemed peaceful and somehow familiar. The ship was as his own, but there was something more. Perhaps more a feeling than a physical presence. As he controlled his breathing and drew in slow and deeply through his nose, the smell triggered a memory. He had been here before, remembering the buffet he enjoyed with Tom a couple months prior. He took another step towards the body, feeling the hair standing up on the back of his neck. A glance back and another step forward; repeated several times until he was almost over the body. He leaned down to confirm the lack of a pulse when a sudden rush of air came upon him. It was not obvious to Gerard if it came from his front or rear. In the corner of his eye, he saw a helmet pack laying on the ground. In about the time it took for his heart to pump another surge of blood through his body, he realized the source. His forward leaning motion towards the body made up for the time he needed to roll away from the unseen onslaught and the sword that now stuck into the floor below where Gerard had just been.

Torakos jumped up and stood over Bohem, ready to twist and deform his body further. Blind with rage, his training kicked in as he recalled the sudden intrusion of unwelcome guests. He stepped over the body and ran around towards his sanctuary. From within, he grabbed the handle of his favorite possession and gave a twisted smile while admiring the portable device. Putting it to his

side, the sword hung loosely from his belt as he ran quickly to a radial tube leading to the port bay. He paid little heed to the other body sprawled out across the floor, aside from the delay it caused him in stepping around the puddle of blood that partly blocked the radial tube's access. He quietly traversed the twenty meter ladder, feeling almost no weight as he approached the port bay. Torakos pulled the sword from his belt but held off activating the device. It could be extended in an instant, but would produce a noise that might be heard through the airlock. Better to surprise them as they poked their heads through. Torakos used the brief period to control his breathing before the ball rotated open. The time expired and the door gave a slight hiss. Torakos stretched his neck around to catch a view of the boarding party. Nothing. Torakos let his body sink into a crouch, preparing to thrust his way through once the door completed its rotation. Startled instead by the helmet cast down upon him, he tried to use his sword to parry. The truncated weapon failed to connect and the helmet hit him on the head before bouncing noisily down the tube. Torakos cursed under his breath, triggered the blade to extend and jumped through the opening, locking his feet within the airlock. Swinging his blade around to meet his prey, he was again surprised to see no one. But there was a sound: someone heading down another radial tube to the crew torus below. He thought to pursue, looking back to unlock his feet. His gaze looked past, down the tube to the dead arm of Akneem. "Perhaps you can still be of use," he whispered as he prepared for the assault.



Torakos took a position ten meters up the tube, looking down at the body below. His patience was rewarded with the faint sound of his unwelcome guest approaching. He waited for the right moment and jumped down the tube to thrust his sword through the back of the perfectly exposed man. He smiled as the air flowed past his sailing attack. Miss!

Torakos struggled to withdraw his sword from the floor.

Gerard used the time to regain his feet and size up his opponent. "You speak English, jackass?"

Torakos responded with a long Arabic curse.

"That's alright; I'm going to enjoy kicking the shit out of you anyway."

Torakos smiled and spoke perfect English. "Just like an arrogant American. Thinking he can use a stick against a sword."

Gerard nodded and started to compose a response. Torakos reacted quickly to the hesitation, jumping towards his prey, swinging a mid-level swipe. Gerard jumped back just in time, but had to parry the second slash that was directed towards his neck. Gerard continued to give ground as he sought for a weakness. An attempted poke at Torakos' abdomen left Gerard with a deep cut to the back of his hand. Luckily, he maintained his grip and continued a defensive posture in an attempt to keep Torakos at bay. Gerard recognized his own lack of experience in fencing. And for all he knew, this man could be a master. With each failed attempt at a strike, his confidence began to slip.

The paperless stations were clear of clutter or anything else Gerard hoped to use to alter the odds. He thought about his helmet, but that was still on the floor where their battle began, most of the way around the torus. Gerard gave a glance back for something, anything. The price was nearly his life, as Torakos attempted to run him through. Again, Gerard retreated in hopes a solution would come to him. He realized that the torus provided an endless escape route. Perhaps all he had to do was wear the older man down.

They continued a third the way around and Torakos gave a smile. From his peripheral, he saw Bohem's body laid out across the floor that Gerard was retreating towards.

"You know I could do this all day," Gerard said as he continued back.

Torakos said nothing nor broke his gaze from Gerard's eyes lest he give away the obstacle that lay in his path.

As Gerard stepped back to parry the next attack, he tripped over the body. Gerard stumbled and jumped back, tucking in his legs, hoping to land on his feet. The flip fell short and he wound up on his belly. Gerard looked up to see Torakos standing over him with the sword pointing down towards his face.

Torakos laughed and spoke something in Arabic to boast.

Between the legs of his assailant, Gerard saw Bohem sitting up and looking back at him. Bohem gave Gerard a pleasant smile and placed his finger over his mouth. Gerard, who was confused by the gesture, began to realize what had happened here.

“Can I ask you something?” Gerard asked, looking up again at Torakos.

“Certainly,” said Torakos, savoring the feeling of having his sword point at the American’s throat. “It is customary to grant a dying man his final wish. I will answer one question.”

“If you are a descendant of Ishmael and thus Abraham, do you not believe in and follow the God of Abraham, the same God of the Jews?”

“Ha! God is my weapon, just as this sword. The people herd like sheep and listen to whatever we force them to believe. We are their god.”

“Who is we?” Gerard asked.

Torakos laughed again and said, “Nice try fool. I have answered your one and only question. Now you will die!”

Torakos pulled back his weapon, like a piston retracting to circle around. Gerard rolled to his right, drawing slightly away from the sword arm. He managed to pull up his staff as Bohem ran into the back of Torakos. Both were jolted forward by the impact, with the blunt end of the pole catching Torakos in the chest. He screamed, but held onto his weapon. Gerard rolled over on top, planting his knee on the sword hand. Gerard quickly landed several hard punches to his head before Torakos bounced him up in the weak gravity, and over on top of Bohem.

Torakos started to rise slowly with his sword in hand, against the two unarmed men. This time, Gerard didn’t delay, landing a kick to his wrist, causing the weapon to fly loosely to the ground. Gerard retracted his foot and launched a side kick to the knee. Torakos’ leg hyper-extended and his

instinct took over to fall back instead of allowing the leg to give way. He rolled around to recover, but Gerard was upon him, getting his arm around the front of his neck. Gerard let his weight fall on Torakos' back as the man violently struggled against the arm lock. Gerard ignored the painful impacts, holding on with his arms and legs until his enemy became limp.

Bohem came over. "I am very sorry my friend. Akneem and I did not know at first the intentions of this man and were too afraid to stand up to him once we realized the truth."

Gerard turned to look at him, still breathing hard from the struggle. "You just saved my life, and you're apologizing?"

"Yes, those men. Those men from the station. I killed them."

"It was your decision to kill them?"

"No, he ordered me to. I was not strong enough to disobey."

"Did your friend disobey? Is that why he killed him?" Gerard said, pointing down at Torakos.

"Torakos didn't kill Akneem, I did."

Gerard changed his expression and took a step back. "You killed him? Your friend?"

Bohem looked down. "He tried to crash us. I stopped him from killing us, but we still hit hard. Torakos wasn't strapped in and was knocked out, dropping his knife. Akneem went after it, but I got it first. He jumped into me and the blade got jammed between us, pushing its way into him."

“Knife? You mean his sword?”

“No, he also has a knife on his belt.”

“Shit, why didn’t you tell me?” Gerard said, leaning down to frisk the still form laying on the floor. After Gerard recovered the weapon, he continued the conversation. “So, it was an accident?”

“I don’t know. I guess. It all happened too fast.”

“I’m sorry for your friend, but we can still set things right. First, get me some straps so we can secure him to a chair.”

“He is not dead?” asked Bohem.

“No, he’s just unconscious and could wake up at any time.”

Bohem nervously turned and quickly walked over to a supply cabinet. Gerard lifted Torakos and had him sitting in a chair by the time Bohem returned with the flat cord.

The ten meter strap was standard issue and could be used for countless reasons: From make-shift repairs, a hasty harness for rescue, to tying the hands and feet together of a would-be criminal. It reminded Gerard of a girl he knew from Colorado-4 . . .Torakos suddenly yanked on the bonds, struggling to free himself while shouting something angry that Gerard didn’t understand. It did snap him out of his daydream.

“Struggle all you want dickhead. The knots are only going to get tighter.”

Torakos looked over and glared at Gerard, who smiled back at him and continued. “Personally, I’d just as soon throw you out into space, but I have a feeling there are more people involved. In fact, even before I tied you

up, I was sure there was someone greater than you pulling your strings.”

“The name you are looking for is Kulari Sheikh Vulkutta,” offered Bohem.

Torakos violently jumped and struggled within the bonds of his chair, causing Bohem to take a step back. Gerard didn’t flinch. He just echoed the name as he continued to smile at his prisoner.

## 41. KULARI SHEIKH VULKUTTA

Kulari looked across the table at his guests. "My friends, we have long seen the evaporation of authority over our people and this holy land. As religious icons, God has shown me the way for us to lead a holy war against the western oppressors who inflict their influence like a virus across our flock." Kulari watched as the collection of sheikhs turn to each other with expressions and murmurs of concern.

Siddique of Gilgit stood up, shouting, "This is madness! You speak of God's plan as if you are in direct communication with Him. Whatever plan you think you have can only lead to the further exodus of our youth and future. Without desperation and hatred against these so called oppressors, we have no extreme leverage over their purpose. We should instead see to the preservation of the hopeful side of our religion and thus our culture."

Kulari placed his finger on the pad that lay before him. At once, four doors opened and a dozen armed military men entered, forming a semicircle around the collection of guests. Siddique looked around and quickly reacquired his seat.



Now that the room was free once again of disruption, Kulari continued, "As I was saying. We have a common enemy and God has shown me a way to destroy all who stand in our way to bring about a new Islamic Earth! Today marks the Mawlid al-Nabi; the birthday of our Prophet Muhammad. When the sun sets today on America, they will witness the destruction of their society. At this moment, a rock that I have given the name of our prophet, is flying towards their Northeast with a size and speed capable of laying waste to everything between their cities of Washington and Boston. Their best attempts have failed to redirect this asteroid, thanks to the help of my captain flying above in one of the American designed tugs."

Siddique broke in again. "How is that going to bring about an Islamic Earth? If anything, our people will feel sympathetic to their catastrophe."

Kulari was growing impatient with Siddique, but welcomed the question that helped him to outline his plan. "Because, we will show that the injury was self inflicted and in fact, malicious. Behind our prophet, trails two smaller rocks with other targets: Israel's Tel Aviv and our capital."

Siddique stood back up. "Islamabad!? You are going to destroy Islamabad? This is insane!"

Kulari left the head of the table and circled around to the other man who remained standing. Siddique looked around for support, but all kept their eyes on Kulari as he approached the now outwardly anxious man. "You do not believe my plan will work or would you rather

play it safe and hope there are followers left to heed your sermons?"

Siddique responded, "I don't see how it can work. You will put our nation in chaos."

Kulari smiled and spoke, "No, I already have generals in the military ready for my takeover of the government. I have the evidence of the western plot to destroy us and how our crew redirected the asteroid away from the Middle East. They will witness our tug struggling to prevent the asteroid from striking Earth, leading to their expulsion of fuel and sacrifice under the rock as it starts to burn up in our atmosphere."

Siddique caught the attention of the men around the table, but instead of support, they cast him a look of doubt. He looked back in disbelief. "You would follow this mad man?"

Kulari took another step and brought his face within an inch of Siddique. "Mad, am I? It is you who is mad. Mad to allow your people to be corrupted by the disease of the west, only to sit back and watch. Or maybe it is cowardice? Yes, afraid to put the needs of your children in front of your own. Well, you will die like a coward. Take him away."

Siddique turned to his peers in desperation. "No, wait! You must stand up ..." was all he got off before getting knocked out and dragged off by the militia.

Kulari turned his back on the disruption and circled around to the head of the table. "I did not bring you all together today to discuss options. I brought you here to include you in the shift of power. I will need each of you

to act as religious governors of your regions. Once the rest of the military is under my command, you will be given control over your local forces. Any backlash must be dealt with quickly and harshly. The people will easily fall in line once our rule of law is established. Obviously you all have questions or concerns, so let me hear them now.”

No one said a thing, but their glances back and forth towards each other spoke volumes to Kulari. “Excellent! Our course is set and there is no turning back. Please return to your mosques and prepare for instructions. May Allah guide your path as it has mine.”

Hurakan of Larkana stood up and applauded. Within a moment, they were all following suit before filing out like sheep to their waiting vehicles.

One by one, each found solace within their limos; breathing a sigh of a relief and the contemplation of what they had just been witness to. As the first reached the gates of the complex, air tanks appeared up the mount to block their exit with a countless number flying overhead towards the castle. The grounds were quickly surrounded and the walls rocked with the massive amplification of the message that followed.

“Kulari’s asteroid has been diverted and his coup has failed. Come out and lay down your weapons or you will be killed.” The message repeated, even as a missile was launched at one of the tanks. The explosion blew off an engine and part of the outer section of the vessel, exposing the hardened form of the egg shaped crew cab within. Quickly, the tank dropped. A parachute shot from the top and was expanded immediately by a charge within. Before

the cab reached the ground safely, the supporting tanks were laying waste to that section of the castle.

Kulari looked out at the window of his tower to contemplate the destruction of his designs. He turned around and picked up the crystal orb that lay on his desk. "No, not destroyed, but postponed." The crystal globe was internally shattered from the fall and blackened from the fire that was once the World Trade Center. He held it up and repeated the slogan that was imprinted there a half century before, "AON. Insure your vision."

Taking nothing else, he descended the stairs and set to a new design to empower his future. Traversing down through the chambers below the castle, he reached the crypt with the sarcophagi that once contained his father. He thought about how they had taken his body as genetic proof to his passing. It was a spectacle to show power over that which they feared when he was alive. "No, you should still fear him, for he is alive in me."

Thousands of kilometers above, satellites circled that helped direct the masses. Some of these were equipped with active sensors that when employed collectively, could map the three dimensional structure and chemical makeup of any building, aside from those with thick encasement. The release of radioactive gas from the bomb contained within the lead coffin set off alerts to treaty officials scattered throughout the world. Among those included to this international nuclear watch were the mayors of each would-be target city and a handful of influential individuals.

False blips were common, especially around power stations and hospitals. But James was already waiting for word to come from the outskirts of Peshawar about the fate of his nemesis. The location and strength easily drew all of James' attention to the signal that the others had chosen to ignore.

The evolution of building codes is a direct product from the harsh aftermath of disaster. Events such as the fire at the Triangle Waist clothing factory in New York to the sinking of the Titanic, engineers who lacked insight to the random dangers of life faced the reality of their design failures. Others who knew the dangers, pushed their designs along to create weapons they prayed would never fall into the wrong hands. With the fall of Berlin to a nuclear terror attack, it was clear those prayers had failed as well.

The alert that James received, unlocked the authority within the scanners to display a zoomed in underground that surrounded its source. As he watched, the device's size and shape became clear, as was its motion up towards the level just below the mosque chamber. Suddenly it stopped, but a ghost like presence hastened away, back down the steps and was gone.

James, still confused by the purpose of the device, drew in the zoom to get a better look. The sphere of thick plastic surrounded the source of the signal with wires extending to computer circuits. He had never seen such a device, but had enough knowledge from specifications given him to finally realize its nature.

Immediately, James triggered the call to ambassador Tabish. Panicked by the lack of a response, James set his attention back to the scan, attempting to retrace the steps the ghost had just traversed down.

In a case of one hand not knowing what the other is doing, the information was late in its relay. As the battle raged on with citizens from the valley below looking up at the events on the mount, a bright light engulfed the surroundings. Those fortunate enough to be several kilometers away, heard the sound and felt the impact of the explosion that followed. None of them noticed the small craft snaking away above the Kurram River.

The granted access allowed James to move the focus of the scan down the stairs, deeper into dungeon layers of the castle until the radioactive residue faded to nil. It took several minutes to wind his view around passage ways in search of an egress. In the corner of a long chamber was a faint trace of activity on the floor. Like a smudge left by a dirty hand. The three dimensional view revealed another corridor below, leading down towards the base of the mount. As he started its traversal, the screen changed to pure red.

It took him only a moment to realize that the effect was not a problem with the satellite feed, but with its source. "Oh my God!" he said and quickly rolled back the zoom to grasp the extent of the blast.

The jagged circle that extended out four kilometers was outlined with the details of the landscape that surrounded the region. James understood that the breaks or



indents in the circle represented valleys. These low lying lands wound around the mountains that offered their protection. He looked at the closest protected valley, closed his eyes from the view, bringing the vision of the corridor back from his otherwise faulty human memory. The line that projected within his head followed that direction.

James moved the view and zoomed to the surface of the river where the lines of contamination were already starting to fade. He maneuvered his perception through the valley, out a kilometer before hitting a proverbial brick wall. Without a trace of contamination nearby, the computer's mandated limit kicked in and blocked his view further up the river. Not blocked as much as there being nothing available to view. Data outside these regions was automatically ignored and erased, as designed by the open source satellite system. Just like the U.S. monetary system, the computer's program was publicly engineered. If only a handful of people within a private company had their eyes on the code, it would have been easy to sneak in a back door. Using countless volunteer developers ensured accountability and provided privacy from those who might use the tool to spy on the innocent.

James cursed under his breath, knowing the data he sought did not exist. What he did have was a traditional satellite view of the ground in far less detail. He pulled up live visual feed and found himself back on the river, working his way upstream towards the mountains that bordered with Afghanistan. Here and there, new widgets popped up with contacts of contaminated people and vehicles moving about along the border of the exposed region. He gave each



a glance and quickly pushed them aside towards the trash. The constant distraction produced a struggle to maintain his attention on the bird's eye view across the river. By the time a few dozen of these contacts presented before him, his frustration overcame his judgment. Drawing an output line from the contact generator to the computer's trash bin solved his frustration, while hiding that which he truly sought. There within one of the discarded signals, was a faint outline of a man with slightly radiated clothes exiting his craft before disappearing within the hidden mountain complex.

The live satellite view provided no useful information to James, as it was the same view publicly available to all. He was unaware of the military's high resolution, thirty day recorded view of this region. James found nothing moving along the river valley and started to believe that it was very unlikely he would. 'No,' he thought. 'It was just not enough time for someone trying to flee from deep within the castle. If that was Kulari, he was killed in the nuclear blast.'

As he sat back helpless to understand what to do, a call came in from the Pakistani embassy.

"This is James Kennedy," he said, in a sympathetic voice.

"Yes Mr. Kennedy, it is Ambassador Tabish, again. I'm not sure if you have seen, but Kulari seems to have ignited a suicidal nuclear blast strike at the site of his mosque."

"Yes, I was just watching. I am very sorry for your loss. Was it a populous region?"

"Fortunately, no. Our estimates put the casualties at ten thousand, including a thousand troops."

"My God, that's horrible."

"Yes, but there is a more pressing issue."

"What is it?"

"Two of the sheikhs being interviewed by the military officers said Kulari mentioned that there are two more asteroids."

"Two more asteroids? How can that be? SkyGuard would have seen them."

"I don't know, but that is what was radioed to us before the place blew. They both reported that the two are said to be following the larger rock. One headed for Israel's capital and another for Islamabad."

"Why would he destroy his own ... Oh God! He was planning a coup," James said, growing more concerned.

"Yes, that was confirmed. They also provided that information, stating he had generals ready to assist him with the take over."

James carried the conversation longer than he wanted. "Generals? Is your country okay? Perhaps you should discuss this with my president?"

"No, with Kulari's death, the revolution is over before it began. Just make sure you can intercept those rocks."

"Intercept, yes. But first we have to find them. Let me start the search. Please contact me if you hear anything more."

"Yes, I understand. Good luck, my friend."

James broke the connection, taking only a few seconds to pull up a joint link to Florida command and the

active tech at SkyGuard. The image of both presented in James' mind and he began without waiting for pleasantries. "There are two smaller asteroids trailing the larger one we diverted. They are on an intercept with the Middle East."

Shawn, the SkyGuard tech broke in first. "Ah, that's a negative sir. We've had all our scopes watching that part of the sky. A bunch of us were here last night cheering as we confirmed the orbital change and watched your tug team retrieve SpaceLift's net off of the rock."

"All of the scopes?" James said in an alarmed voice.

"Well, of course not all of them. There's almost a million after all. The computer is still tracking everything in the night sky."

James continued. "These are smaller asteroids. Maybe only a hundred meters."

Shawn nodded. "Yeah, we would have easily seen them, unless they were coming from near the Sun or something."

James' expression changed. "The Sun? That's it! They must have sent them in a tight orbit around the back side of the Sun. Command, alert Jill Brant and Tom Breslin. Have them look around here." James sent a location doing a quick guess in his head.

"Ah, sir. I think it would be closer to here," Shawn corrected him, pointing to another telemetry mark in Earth's orbit.

James agreed. "Acknowledged. Command, go with Shawn's estimate, and Shawn, I want that location confirmed on the computer."

Shawn looked down to his station. "Okay. Well, let me see. If the target is Baghdad at noon tomorrow, with a hundred-million ton object, flying at fifty kilometers per second ...yup, that's what I thought."

James responded, "Very good. Now rerun the calculation for Tel Aviv and Islamabad."

Shawn lifted his head up a little. "Shit! What were they planning?"

Overwhelmed by what he had just been witness to, James tried to shake it off and heed his wife's call to join the family for dinner. It took a second glass of wine to settle his nerves and allow him to enjoy the meal. Mora noticed the conflict within him, but was gracious enough to wait until the plates were cleared and the teenage boys ran off to occupy their teenage interests.

"Are you okay? Did something happen?" she asked.

"I'm fine. Something did happen, though I can't talk about it right now. Sorry dear, could you ask me about it tomorrow?"

"Okay, I understand," his wife accepted the secrecy, knowing it had nothing to do with her. He had hidden other things, but they came out in time. Probably wasn't much more than a simple legal obstacle he needed to resolve, she thought.

Like countless other times, he used one avenue of thought to drown out another. She enjoyed the game as well, but when he played the letters "N-CLEAR" across her 'U', a sudden fear overwhelmed her ability to main-

tain the façade that nothing was wrong. He recognized the reaction and tried to calm her concerns. "Sorry dear, I couldn't think of anything else."

"Is that because of the letters you had or because that is all you can think of?"

James didn't mind hiding some of the evils of the world from his wife, but he also considered lying to be one of those evils. Knowing that enough time must have passed, he turned to look towards the wall that displayed paintings of Salvador Dali and Max Ernest. "Computer, video news."

The virtual art disappeared and was replaced with a scene that could only be described as hell on Earth. The sick and mangled were being assisted along the outskirts of a charred landscape that spanned as far as his wife's eye could see. She slowly stood up with her hand over her mouth. "Where is this? What happened?"

James opened his mouth to speak, but the reporter drew the words faster; providing all the detail that his wife could not help but listen to. He slid the tiles back into the box and redirected his needed distraction towards the care of his wife. "Sorry Mora. It looks like they had a bomb encased in something that the scanners couldn't see through."

"That's from a nuclear blast? Oh my God, it's like Berlin."

"It wasn't a populated region. Only few thousand in the area, much of them military," James exaggerated the truth to offer as a consolation.

"You saw this happen?"

“I saw someone carrying the bomb to the place where it was detonated.”

“And you didn’t stop him? I thought the whole purpose of those spy satellites was to prevent anyone from doing this.”

“There was nothing I could do. The man dropped the package and ran down in an attempt to escape. Shortly after, the device exploded.”

“Escape? You’re saying he got away?”

“No, he died in the blast. There is no way he had time to get away.”

“And how did they hide that bomb? I thought the scanners can see them through anything.”

“Pretty much anything. They must have encased the device at this location before the satellites went on line. If they had tried to move it to attack a populous region, we would have stopped them.”

Mora started to relax back in her chair, but the tension still displayed on her face as she continued to watch the feed. James leaned back and slid his arm around her. As they watch, rumors started to become public, outlining the plot of Kulari and the asteroids moving towards Earth.

## 42. K42

"You're kidding me, right?"

"Sorry Tom, looks like we have more work to do," said Jill.

"Well, let's get them on our scope so we can figure out how to divert them. Hey Gerard, you there?"

"Yeah man, I'm here. What's up?"

"Bad news dude, we got two more bogies headed for the Middle East. One for Islamabad and another for Tel Aviv."

"No shit! Where are they?"

Jill responded, "Gerard, we have them on our scopes, here and here."

"Okay, got 'em. Man, they're close. Can we loop them in time?"

Tom replied, "Doesn't look good, dude. Think we're going to have to land and push them."

"Can the hull handle that?" asked Gerard.

"Must be. Nick from Connecticut-2 said that the hijacked vessel near Vesta pushed a small rock into Texas-12 and Mississippi-2."



“Mississippi-2? That’s Jay’s ship. They okay?”

Tom responded, “Sorry Gerard, I meant to tell you before. The crews from both tugs were killed in the attack along with Randy Nelson.”

Gerard shook his head. “Damn those freaking bastards. Okay, Bohem and I are closer so we’ll go after the first. Where did you say this thing is headed?”

Tom radioed back, “Islamabad.”

Gerard said, “That freaking figures, does it? Okay, we’re setting course.”

“Good luck, dude. We’ll head for the second.”

Bohem looked over at Gerard after running something on the computer. “I’m sorry, my friend. We don’t have enough time to stop this from hitting Earth. Even if we can land and push at full throttle, we can only push it one direction or another by a couple thousand kilometers or so.”

“Okay, then let’s find a safe place to crash it. Any deserts near there?”

“Yes, Taklamakan in China on the other side of the Himalayas. I think we can make it.”

“Okay man, let’s hit it.”

“Where are we going to push this thing?” asked Jill.

“I don’t know, but let’s get there first.”

With one of the three engines disabled, Jill had to program the computer to pulse an engine from one side of the ship to the other. With the help of the tug’s rotation, they were able to maintain some stability. Rachael, who

had tried to sleep in her room, found her way up to the pod to avoid being sick.

"Ah, sea legs. I feel like I'm back in the Navy," Tom said with a smile.

"I remember what the ocean feels like. This doesn't feel like the ocean," Jill replied, looking a little green.

"I wasn't talking about a cruise ship," Tom said in a challenging way.

"It just so happens that my grandfather was a fisherman. I spent much of my summers on his and my family's boat. This rhythm is way too fast. Not the gentle and slow rocking of a boat on the water."

"Try putting up a picture of the horizon to stare at. That always works on a boat," Tom offered.

"I'd have to program the picture to move against the rhythm to make it appear stationary. Too much work."

"Well, looks like we're getting close anyway. Where did you say we were putting this?"

Jill just glared over at him.

Bohem landed them on the side facing the Earth and immediately hit the engines to full.

Gerard looked down at his screen. "Man, we used a lot of water matching velocities and landing. I'm not sure we are going to have enough to push this rock that far and still have water to regain orbit."

Bohem agreed, "I think you are right my friend."

Gerard suggested, "Aren't the mountains also very desolate? If we impact one of the taller peaks, we should avoid hurting anyone."

Bohem nodded, "Yes, I think that should work."

Gerard asked, "What's the tallest one in this region?"

With the tug pushed into the bottom of the asteroid, Jill disabled the osculation program and set the two working engines to full. Ever so slowly, the stadium sized rock moved from its course.

"Earth looks beautiful, doesn't it?" asked Tom.

"Yes. I didn't realize how much I missed it."

Tom offered, "You know, if we can get SpaceLift in position, perhaps we can take a ride down while they repair the station and our tug."

Jill agreed, "Another excursion? I like the way you think."

Tom continued. "I got it. How about snorkeling in the waters off of the Galapagos?"

Jill allowed herself a moment to dream. "Ah, stop teasing. Remember, we still have to get back to Ceres and help with the new station."

Tom tried to convince her. "I am serious babe. We can't go anyway until they fix us up. That's gotta take at least couple weeks."

Jill reluctantly had another idea. "What about the Pakistani tug?"

"Wait. You would give up your vessel just to get out there quicker? Damn, you are a determined woman. Remind me never to get on your bad side."

Jill gave herself time to think about it. "No, you're right. They should send up a new Pakistani crew. It's horrible what they did, but that was the act of a few individu-

als and not the will of the nation. They should be given a chance to prove that. And yes, you don't want to get on my bad side."

The comment made Tom think. "I wonder what they are going to do with Bohem."

"Make him the captain," suggested Jill.

"There is no way they are going to let him stay on that tug, let alone lead. Too much has happened and many would place blame on him."

"But he saved us. Saved the planet!"

Tom shook his head. "It doesn't matter. If you helped set a fire, they don't give you an award for putting it out."

Jill conceded, "Yeah, I guess you're right. Hey! Check that out."

Tom looked to the screen to see the Moon coming up over the edge of the Earth. "Sweet!"

"Okay my friend, I'm disengaging," said Bohem.

"Jeez man, we're close. I think we're going to run out of water before we can regain orbit."

Gerard hit the transmit icon. "Hey Jill, once you guys get that rock moved, we're going to need a little help. Maybe even before then."

Tom radioed back, "What's the problem dude?"

"Yo man, we're running out of water and the Earth is growing large."

Tom looked at the telemetry, seeing them pulling straight back from the Earth. "Dude, change your course ninety degrees to increase your orbital velocity; go parallel to the Earth."

Bohem spoke, "My friend, if we do that, we will certainly hit the atmosphere."

Tom shouted to reinforce his confidence. "Do it Gerard! Do it now!"

Gerard looked over at Bohem. "Do it. I trust him."

"Okay sir," Bohem acknowledge, tilting the tug sideways and pushing the engines back up to full.

Tom continued, "Good. Now once you feel the atmosphere hitting the lower edge, tilt down and hit the engines directly away. It should be just enough."

Gerard asked, "Just enough for what?"

Tom replied, "Enough to bounce you off the atmosphere."

Gerard sounded a bit worried. "Shit man, I don't like the sound of that."

Tom spoke, unwavering by the prospect. "Trust me. It's the only way. We can't get there in time to pull you up. And if you pulled directly away, Earth would just pull you back. You gotta make orbit or else."

Jill turned to Tom, quietly saying, "You know these vessels were not designed with much of a heat shield?"

Tom nodded. "Yeah, I know, but it should be enough."

"I hope you're right."

"Hey guys, check out the scope. Your rock is entering the atmosphere," said Tom.

"God, I hope no one is on a climbing expedition," said Jill in a worried voice.

Bohem radioed back, "It should be okay my friends. They never climb the mountain in winter."

As they watched, the asteroid turned into a fireball and continued steadily across the sky and down towards the summit of K2. The mountain erupted as if were an active volcano. Liquefied rock and ash exploded in a mushroom cloud that was seen and heard for hundreds of kilometers. The impact flattened the once extremely vertical peak. Losing over a kilometer of elevation, the mountain's name was also sacrificed; reduced to K42.

From space, the impact was not nearly as dramatic, but each of them could not help but stare at their screen. The sudden sound of faint gasses hitting the edge of their vessel at thirty-thousand-kilometers an hour was more than enough to steal Gerard and Bohem's attention. Inadvertently, the force from the air started to tip the vessel down towards Earth. Bohem turned pale and hastily hit the thrust to push back, slowly facing the tug once again away from Earth. The struggle against the resistance used much of their remaining water. Bohem cursed under his breath when he realized he could have simply reversed his engines.

The unnatural sounds echoed throughout the vessel like complaints made by an old washer machine that grew ever louder. Bohem tried to ignore the noise, praying there was enough water to push away from Earth as it put all its mass into pulling them down. The exterior pressure built up, heating the bottom surface. Gerard was waiting for a sudden bounce, but instead the combined effects of the atmosphere and engines reduced their fall in a shaky but steady manner. Their sideways motion across the planet took them past the spherical apex and out the other side of

the atmosphere. When the vibrations subsided, Gerard let out a loud “Yeah!” to replace the newly acquired silence. As the echoes faded, Gerard noticed the lack of even a hum. He checked his screen to verify. The two men looked at each other at the same time saying, “We just ran out of water.”

“We’re disembarking now. Sit tight and we’ll have you out of there in a jiffy,” radioed Jill.

“Great, cause it’s getting a little warm in here,” replied Gerard.

Tom laughed. “Ha ha. Sorry dude. Guess you guys got a little cooked.”

“Yeah, not funny man. Hey, how’s Rachael doing?” Gerard asked, trying to change the subject.

Jill laughed and replied, “She’s resting her eyes. He-he.”

“Well you better hope her surgery works, or I’m going to tell her you said that!”

Gerard unbolted the seat that Torakos remained tied to. It was an easy matter for Gerard to carefully lift and guide him over to the radial tube within the stationary tug without bumping his head a few times into the bulk head, but Gerard didn’t feel like being that careful with his non-precious cargo. He took some satisfaction from the grunts and groans that emanated from the bag that covered Torakos’ head. Gerard made an extra effort to find an obstacle each time Torakos fought against the bonds. By the time they reached the pod, his prisoner was much



more compliant. When Bohem entered, he had a confused look.

“What’s wrong man?”

“Sir, if their ship is damaged and needs to be repaired by an Earth crew, wouldn’t it make more sense for us to stay in this tug?”

“We have no water and our battery backup isn’t going to last that long.”

“I understand that sir, but they can pipe the water over and provide power for our reactor ignition.”

“Shit man, you could have said that before I dragged his sorry ass up here,” Gerard said as the bag over Torakos’ head shook side to side.

Maine-3 was left a derelict in orbit around the Earth, while Jill reluctantly took command of the tug that was used to kill so many. She shook it off and set an intercept with SpaceLift Station. Their course was slow and steady. With little water left, she feathered the throttle just enough to get them there and back.

In the distance, Tom saw the moon rise again and noticed the countdown drawing to completion.

“Hey guys, check this out,” he said, pulling up an enhanced view of the moon.

Gerard looked over. “Yeah, it’s the moon, so?”

Tom smiled. “Seven, six, five ...” He stopped counting, but didn’t stray from the view.

Gerard leaned in out of curiosity. The bright flash that appeared on the surface produced a few “ews” and “ahs”. Gerard smiled and said, “Nice. Tela Lunar”.

Tom offered, "How about New Jerusalem?"

Jill added, "Not likely. It'll take us at least another hundred years to figure out how to terraform the moon."

Gravity drew down the seemingly endless ribbon to Earth as they approached a geosynchronous orbit above SpaceLift's Ecuador base. Next to Jill, Rachael sat with bandages around her eyes and head. "God, I hope they can fix me up when we head down. It's not fun being blind."

"You'll see again baby. Either they'll fix up your old eyes or grow you a new set."

"I wish I could see the Earth. It must be beautiful from up here."

"I'm not sure I have the words, but I'll try. It's almost all blue, like your boyfriend's eyes."

"Hey, stop looking at my boyfriend's eyes," Rachael broke in jokingly.

"Looks like a big storm over home, can't even see through to the outline of land and sea. Must be all snow this time of year. The weather looks much nicer down below. You can see the turquoise water next to the sandy tropical beaches."

"Ah, wouldn't it be great to feel the Sun against your skin?"

"Sure, but I think we would need a lot of sunblock."

Gerard walked up to join them. "If I was laying on that beach right now, I'd so be taking a nap."

## 43. HAUNTED SLEEP

James abruptly awoke from the nightmare with the false red image in his mind; the mind that quickly filled with thoughts over that which were too much to process at one time. Now wide awake, he lifted his head and looked over at his wife's nightstand. "Four o'clock? You gotta be kidding me."

Mora mumbled something that James couldn't make out, but he didn't bother her to clarify. His only concern was getting back to sleep. Flipping to his belly worked for a brief period, before his head caught back up in the race that the rest of him could only wish for completion. Giving in, he got up to catch a drink of water and walk off his runaway brain. The question in his head led to curiosity. Unable to sedate the thought, he decided to view the latest on the events in Pakistan.

The asteroid impact in the Himalayas produced yet another question for him to answer. It took a half hour to finally get in touch with the crew above. The conversation turned more towards congratulations on their success once he confirmed they were safe and able to avoid any loss of life on the surface.

Still unable to sleep, he thought about the effort that Kulari built into his scheme. ‘Such an elaborate plot could only have been engineered with the highest level of patience and planning. It would have set the world back a hundred years,’ he thought.

The haunted battle raged between his exhaustion and determination to find a solution in the madness. He removed the headset and got back into bed. As he closed his eyes the thoughts continued to bounce around, unimpeded by his exhaustion, to find some final resting spot in the puzzle.

The sights flashed in his mind. Those from the nuclear treaty satellites, the live view of the river valley, to the news feed that he and his wife stayed up late to watch. The images combined with the words: ‘coup’, ‘asteroids’, ‘plot’, ‘nuclear’ ... When the image of the corridor leading down to the river’s edge flashed at the same time as his lips mouthed the word ‘elaborate’, something became clear.

He jumped back out of his bed with his headset in hand.

The polite synthetic voice answered the call. “Welcome. You have reached the Central Intelligence Agency. Please state your name and the nature of the call.”

“Hello, this is James Kennedy, CEO of the Mars Terraform Project. I have information regarding the nuclear explosion in Pakistan. Please redirect me to the commanding officer on duty.”

“Your identity is confirmed. I am redirecting your call. Have a nice day.”

“Day? Yeah, right,” he said, shaking his head.

The image provided by the headset went black for only a moment.

“This is Lieutenant Greg Merrick. How can I help you Mr. Kennedy?”

“I think it is I who can help you. As you may know, I am an official on the nuclear surveillance committee. Last night I witnessed Kulari placing the bomb before it was detonated. I also noticed the faint trail that he left as he made his escape to safety.”

“Escape!? He escaped? Why didn’t you bring this to our attention sooner?”

“Because I didn’t realize at first that he could have escaped, but I know now that he did.”

“How? To where?”

“There was a tunnel within the mountain leading down to its base near the Kurram River. I believe he use the low lying area of the river valley to fly a craft to safety. At first, I didn’t think he had enough time, but decided to use the public satellite view to search for him anyway. After a few minutes, I started to believe it was a pointless effort.”

“My view is better. If he did make his escape over that river, we’ll find him. I’m sending a unit to pick you up.”

“No need, I have a craft,” said James.

“Mine is faster. I’ll have someone at your roof port in ten minutes.”

“Ah okay. I guess I could use a nap during the flight.”

“It’ll be a quick flight and I guarantee you won’t spend it asleep.”

“Lieutenant, I can nap pretty much anywhere.”

“Good luck with that, sir. See you soon.”

James put on some clothes and ran water over his face before heading up to the top of his apartment building. He stepped out of the door, into the cold and mostly quiet night. He cursed at the vacancy, wishing he had taking the few extra minutes to shower. As he turned to contemplate grabbing a warmer jacket, he heard a distant sound above that he would have otherwise mistaken for random city noise. As it grew closer, there was a sudden rush of air that came about him. James grabbed hold to prevent being pushed down and looked up to see the F-44 Hummingbird fighter descend vertically from the sky.

“You gotta be freaking kidding me!”

James watched the plane set down before feeling the winds subside. The copilot exited the craft and directed James to take his seat.

“I’ll buckle you in, sir. Please don’t touch any of the control systems.” It was a tight fit, especially the helmet provided to him, but James complied with every directive. “There you go, sir. Enjoy your flight.”

Overwhelmed with the sights within, including the view outside through the glass, James found himself still fixated on the copilot below for some type of reassurance. None was offered. Once the plane cleared twenty meters, the forward thrusters kicked in, wrenching James away from the sight and back hard into the head rest. He couldn’t even muster the scream that he might have otherwise let out.

## 44. CHANGE OF PLANS

The rooms within the subterranean structure did not bear the appearance of a cavern, but a home. False windows lined the walls, giving the view of the majestic mountains that surrounded the one in which they lived deep within.

To Kulari, it was a prison next to the proud palace that had displayed so beautifully just yesterday. The weight of the mountain around him bore deeper into his anger, only to feed his determination to find a method of revenge. ‘Anger can be an ally,’ he thought. ‘I will use every strength against them.’

Putting on his garb, he set off for the first stage of his new task.

“What is the path of Ceres?” asked Kulari.

“It is falling from its orbit, but they are far behind their deadline needed to impact Mars.”

“Show me the orbits.”

“As you wish, my lord. Just one moment.”

The worlds within the inner solar system animated as the days and months clicked by.



“This is Ceres’ current orbit and this is the best they can do using their reduced fleet of tugs.”

When the time counted down to March of 2057, the darkened region formed a cone that represented the paths that Ceres might travel. The animation paused, showing Mars well in front of Ceres’ decline.

“You have won, my lord.”

Kulari glared back at the man. “Do not speak of victory until the war is over. This battle has just begun.”

“But his dream has been destroyed, along with the influence he has used against us.”

“You underestimate him, my son. He is shrewd and resourceful. We must assume they will find a way to further reduce the orbit. Once we discover their method, we will work towards its dismantle.”

“How we will do that, father?”

“Not us my son, but your sister. She will use but a flower to intoxicate their thinking and lower their guard.”

Kulari spoke as he continued to contemplate the frozen animation. There within the image came a thought. Something produced from the numbers that danced within his head.

“Continue the orbits around another half year.”

“Yes, my lord.”

The cone continued behind Mars and passed inside the orbits of even Earth and Venus. The dark image gained speed as it drew closer to the Sun before getting whipped around and back out in the stretched loop that represented its new elliptical path. The young man felt alarmed by the realization of the overlap, but fought against projecting

his reaction so as not to disappoint his father. When the animation paused once again, Earth lay within the dark region.

Kulari smiled and quoted from the Qur'an, "He directs the affairs from the heavens to the earth; then it ascends unto Him, on a day the measure of which is a thousand years of your reckoning.' Thirteen hundred years before man created instruments to measure the speed of light, Allah inspired Mohammed to inscribe it into scripture. The enemies of God have their course and we have ours," said Kulari.

"I am sorry father, but I do not understand. If Ceres were to collide with Earth, it would destroy all human life."

"Yes, and gone would be their godless ways. I am willing to accept that outcome, if that is the wish of Allah."

"But if there is no one to praise Him, how can that be His wish?"

"If we put this in the hand of Allah, He will show His presence and save those who fear and worship Him. The smallest exhale of His mighty breath will wipe away the sins of the world while diverting the rock from enacting complete destruction."

"And if He truly provides us the free will to direct our own paths, as the scripture also dictates?"

"That is a chance I am willing to take, my son. Send the order, now!"

"Yes father."

James Kennedy stood in a command room from within the Pentagon. He took a sip of his tea and stared at

the large three-dimensional display that covered the wall. The recorded video feed verified the fears he knew to be true.

Greg came in. "We have him. No one has come or gone since that craft entered the complex."

"So we're sending a team in to get him?"

"Negative. The President gave the word. We are to take out the complex."

"With what? That bunker is deep underground."

"Trust me," Greg said.

High above, large kinetic projectiles quietly circled, patiently waiting for a command to slow them from their otherwise endless path around Earth. These glass-lined, thick metal tubes, filled only with cement, had the explosive force equal to a small nuke when traveling at forty-thousand kilometers an hour.

The command that traveled up at the speed of light, directed the weak thrusters to pull the missile from the heavens. Like a small exhale, the precise but faint nudge sealed the fate of those who played with the destiny of man.

James saw the image change from a close up view of the mountain to one far up in space. The perspective was from a camera at the tip of the large missile. The view turned to include Earth at its center. At first, it appeared to be stationary, then James noticed the Earth growing larger until it filled the screen. The weapon started its cut into and through the atmosphere, with the lens maintaining its view just ahead of the wake of fire. The powerful magnetic

field generator reduced the air pressure around the missile and the solid rocket counteracted the remaining resistance, pushing the weapon even faster towards its target.

From far above, the mountain displayed its size only by the shadow it cast. James watched the detail grow quickly until he swore he could make out the small hidden entrance. In the blink of an eye, the screen switched back to the enhanced satellite view. The landscape erupted less dramatically than Greg expected, though he understood that from within the mountain, the effect would be nothing less than complete.

The projectile penetrated fifty meters through the mountain structure before its energy pushed past the critical point. Everything from rock, wood, synthetics and flesh all turned to heat. The mountain top lifted off a moment with its supporting side walls blowing out in all directions. Gravity overcame the now dissipated force, imploding the remaining mass and evil designs down upon itself.

Kulari was no more.

## 45. INVENTION OF NECESSITY

Out of the stunted skyline of what had been Chinatown, rose a two-hundred story, glass, steel and concrete tower. James had admired the construction and complex symmetry of its design. Over the last few years of its assembly, he followed the progress and waited with bated breath for the chance to take in a view from the top. Now that he was on his way, an uneasy awareness of the height surged through his being. He found himself contemplating the massive weight on the structural elements, the thick triangular core, the hardened walls that extended out to divide the three suites of offices on each level. The lead designer said it could withstand both the impact and fire from the largest commercial aircraft. James hoped that wouldn't be put to the test, especially today.

From across Division Street, James stopped for a pretzel. It smelled good, but the purchase was more an excuse to delay his entry into the world's tallest building. From this proximity, the peak that reached up a full kilometer was no longer in view. James stretched his neck as he

chewed, viewing the triangular surfaces that formed two-hundred meter diamond-like protrusions.

He crossed over to enter through one of its six sides. To his surprise, the egresses provided only one way access; for those leaving the building. He looked to the side to see people entering through one of four smaller and complementary structures that acted as secure terminals into the building. It was a simple walk through the scans with seemingly no presence of individuals scrutinizing his entry.

From within, James drew a breath and contemplated the scene. Similar to merry-go-rounds at some carnival, two rotating platforms took up most of this third of the lobby. People blindly stepped through sliding doors into waiting elevator cars that moved around with the platform.

James suddenly found himself a little less worried about the building's height compared with riding an elevator car that wasn't directly connected to cables or a braking system within the elevator shaft. He recalled the specs for the "roller-coaster" he had viewed a year back. The system had a shaft that was divided into three lanes for each direction. The primary lane contained a perpetual conveyer belt with slots to carry cars near their destination. The loop made its way up and down the building at one constant speed. The second lane contained local elevator lifts that paralleled the beltway to match velocities for the transfer of cars and to complete their trip to a community level carousel or an office level dock that took up the third lane.

James stepped into the small, six person car, looking in vain for a seat or handhold to help him with the lateral

motion he anticipated. Seamlessly, the box was pulled back, up and then over into a slot, while producing nothing but the sensation of purely vertical motion. With little more than a few simple tilts, a glass of water set on the floor would neither spill nor lead someone to believe the car was not consistently level. Most people didn't question the direction of the mechanism even after stepping out into a stationary hallway many stories up. This small triangular hall or core (that housed the elevator shafts, stairwells and utilities) would have needed to be four times the size using conventional, stacked and even double-decker elevators. Without this vertical, six-lane highway, the tower could not exist to support so many. Some said the new elevator system would not have been invented without the push for such a skyscraper.

As with the lobby, the top six levels were an extra story tall. But where the ground level was large enough to house carousels for all six primary elevators, each top floor provided access to only one. James stepped out and off the spinning platform, ignoring the shops, eateries and people. Like other first timers, he made his way over to the nearest window. It took him a few moments before he realized his mouth was still wide open.

The view extended east past the city boroughs, out along the coast of Long Island. James swore he could almost make out the historical lighthouse that resided at its end. Some of his favorite memories of camping 4th of July week out at Hither Hills came to life. He decided a vacation with his own family out on the beautiful beaches of Montauk was just what the doctor ordered.



He gave a frown, realizing the summer was still a few months off.

James finished his survey of the surrounding sky, land and sea. He turned to look for his party on what he thought was the top floor, only to find an escalator ascending higher. After climbing a few more sets of mechanical stairs, James came to what many dubbed "the top of the world." The floor was vacant of shops, but did have a number of tables where people could sit to enjoy a snack, coffee or a simple conversation. He got off the escalator and saw Phil waiting in a chair with a cup of coffee and a Speech-Sentry device on the table.

"What are you trying to say?" asked James.

"I'm saying that we can't bring Ceres down in time to collide with Mars," answered Phil.

"You say 'can't' in such absolution, my friend."

"I'm telling you James. This pushed us off by at least a year. We would have to send up another three or four hundred tugs to overcome the delay."

"Then we send another three or four hundred tugs."

"We'll be lucky if we can keep the ones we have out in the belt. After what happened, people are forming protests to have the project scrapped."

"Then we'll have to rally back. All we need to do is show the world the project is still on track."

"Still on track? Aren't you listening James? We are at least a year back. We would need a miracle."

"Some say necessity is the mother of invention. I think we look for these needs just so we can invent. To

me, there are no miracles, just inventions waiting to be invented. So all we need is an invention; an idea."

"An idea? What kind of idea?"

"I don't know, yet. But I am sure we will find one."

"Seriously James, this is not a simple asteroid. It is a dwarf planet that you have unleashed into the inner solar system."

"I unleashed? We were controlling its descent perfectly until the son of Satan murdered three hundred and forty-three of my crew," James said, starting to lose his temper.

"I'm sorry. I understand that. But the fact is that you built the weapon that nearly killed a lot more than the few hundred in space. The people of the world have lost trust in you and your project."

James thought about the sudden increase in death threats posted anonymously on the web. He hadn't seen that since the project started and realized that his friend could be right. "So, what is your point? What do you suggest we do?"

"I don't know James. But if you can come up with an idea, the sooner we put it in place the better. A few more of those asteroid impacts into Ceres and they could have pushed that thing towards Earth."

The sudden expression from James was not one of alarm, but resolution. Phil squinted his eyes and asked, "What are you thinking?"

"I have an idea!"

## 46. VESTA STATION

The irregular shape and rotation of Vesta made it nearly impossible for a tug pilot to manually plot a course around her in order to gain the required guidance and gravity assist. However, each tug contained gravitational scanners that could map the density and make up of these large bodies. With this information, the ship's computer made the trajectory calculations seem like child's play. The scans also revealed a subterranean cavity that contained over a million metric tons of water ice. At the surface above this cavity was a newly constructed station of tubes and ports.

Vessels resumed their orderly queue, collecting objects behind Vesta's orbit to whip them around up to a hundred and forty degrees back from whence they came. Each asteroid slightly pulled back on Vesta's orbit while giving them energy to achieve the redirection towards their new target: Not Mars, but Ceres. Without the time and tugs needed to lessen Ceres' orbit via the tiny nudges made by asteroid flybys, objects were now being swung around Vesta and into Ceres to provide that extra, more substantial push.

With a third the mass and gravity, Vesta didn't provide enough of an assist to throw these objects into a complete reverse, but with the help of a tug, it did the job. The key was water. Without the seemingly endless supply, the mission of crashing Ceres into Mars was lost. Now, by the hand of the enemy, Mars would not only be joined with one world, but two.

"Vesta-1, this is Maine-3 towing Orono," radioed Jill.

"Copy that Jill. Your course is confirmed and clear. Enjoy the swing," replied Evan.

"Acknowledged Vesta. We'll be coming in tight. Enjoy the show."

"Will do. Out."

Rachael looked over at her friend. "I still don't like it. We're using this place as a base when it was first used by our enemies."

"Sounds like Iwo Jima off the coast of Japan," replied Jill.

"Hmm, I never thought of it that way."

"Yeah girl, a lot of forts on hills and islands traded hands during the course of human warfare."

"What are you a history buff, too?"

"You know I am," Jill replied, looking a little confused.

"Yeah, I know. Guess I'm just a little blue."

"I understand, Rachael. I really wish you could see, too. We're going to be so close on this flyby. I'd be blue as well if I had to watch it by sensors."

"It's not that. I'm scared, Jill. In a few months I can take off these bandages and I'm afraid that the only thing I'll see is that my eyes didn't grow back right. Find myself not wanting that day to come too soon."

"Your day will come and it'll be a good day. That doctor was just covering his ass."

"Well, it's not nice taking away a person's hope like that."

"How many times do they tell patients they'll never walk again, only to have them running the next year? Not only will you see, but you will appreciate life's beauty better than any of us."

"I hope so. Walking around with these cameras around my neck paints the world in an ugly black and white."

"Hey, I'm just happy they set you up with that thing so you could come back with me."

"Well, they couldn't discharge me from the mission and kick me out of my home after I saved the planet and all."

"Only you? What about me?"

"Of course, you too, silly. But remember, if I didn't drag you out that night, we never would have met the guys."

"We didn't need the men to take an excursion around Mars."

"No, but we needed them to take on that ... that ..." Rachael struggled for a strong enough word to displace the disagreeable taste that formed in her mouth.

"I guess you're right. If you didn't feel the need to let your hair down, everything would have been lost."

“Well, a girl has to be entertained, you know.”

“Speaking of entertainment, here we go. Hey, you guys watching?” Jill called over the console to the men who sat within ear shot.

Tom hit the icon to reply, “You know we are.”

“Well, just make sure you buckle up. This is going to be a tight ride.”

“Buckled up? Yeah, you got the wheel and we’re strapped into the back seat. Steer our little race car around that turn, Earnhardt.”

“Very funny.”

Jill reeled in the tow cord to a mere ten meters above the surface of the kilometer wide rock that they had in tow. To the untrained eye, her course appeared to be set for a crash landing with Vesta. Going on blind faith in the navigational computer, Jill hit the engines to increase their speed and draw them even closer to the surface. The thrust of the engines combined with the force generated from Vesta’s mass drew the asteroid in a curved path over the small world.

As they flew closer, ever closer, Jill found herself to be a spectator. It was her first personal view of Vesta, with the surface directly below nothing but a blur. The extreme differences in speed, brushing by so close was impressive, but the proximity of the fast approaching ridge, in line with the apex of their orbit, gave Jill pause. For a moment, she was able to brush off the hesitation, knowing this was a first for her, not the computer. Another look and her concerns broke down the trust that would have made her question the division of day and night.

Tom must have seen it as well, because his alarmed voice echoed around the tube. "Guys, you see that!?"

"See what?" replied Rachael.

Quickly, Jill switched from the live view of the surface to the stored geometry that was transmitted to her computer before the start of the swing. The small ridge or large boulder disappeared and then reappeared as she toggled back.

Tied to the asteroid and closely wedged between it and Vesta, she had no room to tip the tug sideways to maneuver an escape. She glanced over at Rachael, feeling as if they were nothing more than passengers on an ill fated ride. Not being one to give up, Jill reduced the engines and engaged the reel to pull them into a crash landing with the rock they had in tow.

"Hold on!" was all she got off.

Rachael screamed when they hit, causing their spin to suddenly decrease as they scraped around the surface. The engines helped absorb some of the impact and worked as bearings to soften their sudden loss of rotation. The console view was lost and Jill imagined them being squished like a paper model between the two massive bodies. With Maine-3's rotation approaching nil only moments before reaching the ridge, Jill reversed the engines to full in a desperate attempt to nudge them and the rock up and over the approaching doom. She cringed and prepared for the impact. A few silent moments went by and Jill realized they had safely cleared the obstruction.

Jill reacquired the view to confirm, cut the engines and looked around the tube.



“Everyone okay?” Jill shouted out and got a quick confirmation from the men.

“Yeah, I guess. What the heck happened?” asked Rachael.

“I’m not sure. Give me a minute while I figure out if I can get this rock back on track to Ceres.”

Jill shook her head, seeing a thirty degree loss in the swing.

“There is no way we can make it. Computer, plot an intercept with Mars,” requested Jill.

The three dimensional course that displayed in red was a few degrees off of the green path they were currently headed.

“Good, let’s push it there.”

“Maine-3, this is Vesta-1. Jill, why did you fail to maintain your course for Ceres?”

“Because you failed to provide us an accurate map of the surface. Either someone’s been mucking with the computer topography or building hills down there. Alert any trailing tugs of an uncharted obstruction at this location and assemble a meeting. Whoever did this scraped up my ship and nearly cost us our lives.”

“Copy that Jill. I’ll send a tug out to update the readings, but I’d rather not make a big announcement that someone else is trying to sabotage the program. I’ll assemble a small team to investigate. I gather you want to be part of that.”

“You bet I do. First thing I’m going to do is swing by that mound to get a better look. Can you check the records for the last time the topography was updated?”

“It’s been a few months Jill. We’re still working on the data created when we founded the station.”

“That’s not good enough. We have to scratch the surface to redirect these rocks that far around. Close enough to even shift Vesta’s landscape a little.”

“So, you think that this could have inadvertently been caused by the hundred or so prior flybys?” Tom joined the conversation.

“Well yeah, I guess it’s possible,” Jill conceded.

“Then let’s not go telling anyone we might have a saboteur until we have some proof.”

“Jill, I have to agree with Tom. Let’s keep it quiet until we know,” said Evan.

“If there is proof, I’ll find it.”

“Then let’s hope you don’t. The last thing we need is to go through that again.”

“Evan, even if this was just an accident, we still need to build in a better safety margin into this strategy. These flybys are too close,” Jill said, still shaken up by the close encounter.

“What other choice do we have? Any higher and we wouldn’t get enough of an assist.”

“We figured out how to save Earth, we can figure this out,” Tom said, convincingly.

“I’m all ears,” said Evan.

“We’ll figure that out later. First I want the guys to take a look at that ridge,” finished Jill.

The retractable legs extended from the bottom of the tug and settled on the surface. The dust quickly faded after the engines were cut, revealing a bright, moon-like surface.

Tom opened the hatch and made the easy jump down with his friend. He wouldn't be running any races, but Gerard was happy just to be able to walk on a world with enough gravity to forgo the need of a tether.

"I bet we could find something interesting here," he commented.

"Dude, we're looking for evidence of sabotage so let's hope we don't," said Tom.

"What kind of evidence?"

"Something to indicate this little ridge was moved here instead of gradually shifted due to flybys."

"How are we supposed to do that? We're not geologists, man."

"Name me an Earth geologist who has seen as many extraterrestrial rocks as you."

"How could I? I don't know any geologists."

"I'm just saying, unless they are out here with us, none of them have. For all the stones you get to look at, they should give you an honorary doctorate when we complete this mission."

"A doctor of geology, yeah right."

"Fine, but tell me though, what kind of rock is this?" Tom asked, handing him a loose stone from the surface.

"It's plutonic, consisting mostly of oxygen, iron and silicon."

"How do you know that?"

"When you're looking for gold, you gotta know the difference in the colors. And you can tell this was formed with little pressure. See how loose it is? What we want is something formed in the furnaces of a sun."

“Yeah, I see. I see that you know a lot more about this than you’re admitting to.”

“Okay. So maybe I do know a thing or two about geology.”

“Glad we cleared that up Doc. So on to the bigger picture, what do you make of this mound?”

“I don’t see any boot prints or something to indicate this was moved or tampered with recently.”

“Me neither. And what about flybys slowly drifting up material?”

“Like a snow drift, huh? That’s interesting. You know, since the tugs are all going around the same direction, I would think there should be a steeper ridge on the far side.”

“Now you’re thinking like a geologist.”

Tom and Gerard hastened around to have a look. As they had wanted to see, the gradual incline reached a peak with a sudden drop that curved off as it reached the main surface level.

“That’s a relief. Okay, let’s get out of here. First beer is on me.”

They turned around and headed back without noticing the two lines on the nearby surface, equal to the space between a shuttle pod’s landing gear.

The crew of Maine-3 sat around a table within Texas-8.

Jill took a small sip of her beer. “I should have brought along some equipment to make wine.”

“You know how to make wine?” asked Tom.

“Well, no. But I’m sure I could learn.”

“Hey, at least the food is good. I can’t believe they were able to make great ribs all the way out here,” Gerard said in between bites.

“Why not? It’s easy enough to freeze meat and doing so helps absorb more of the marinade. Ask any Texan,” offered Rachael.

“You didn’t tell me you went to Texas.”

“That’s because I never did.”

“Then which Texan told you that?” asked Gerard.

Hearing the man who served them a few tables away, Rachael gave a discreet motion towards him.

“Damn, your ears must be working overtime without your sight because I didn’t hear him say that.”

Rachael gave an embarrassed smile, but was happy to avoid telling Gerard the conversation she shared with the man was from the year before.

“Well, it sure worked. These are amazing. Too bad it’s not all-you-can-eat night,” Gerard said, licking his fingers.

“Yo Doc, save some for the rest of the station.”

“Dammit Tom, I’m an engineer, not a doctor.”

Tom looked over at Jill, who was sharing his laugh.

“What are you guys laughing at?” asked Gerard.

“Nothing Doc. Just make sure you wash those hands before you operate.”

Gerard looked at his fingers. “You got that right. Be right back.”

The bathroom a few meters away was occupied, so Gerard circled around to the next. He broke protocol and

washed before he peed, not wanting to spread rib sauce over himself. When he opened the door and stepped into the crowd, Madia caught him by surprise with a quick kiss on the lips.

“Did you miss me?”

“I’m sorry, but I’m with Rachael,” he said, pushing her back.

“You were with me, first. In fact, so was she.”

“So what does that mean? Whatever the case, I am with her now,” Gerard said, looking around in the direction of his party.

“You would prefer a blind bat to a beautiful swan?”

“I’d say you’re acting more like a vulture,” Gerard said, stepping around her.

Madia, angered by being disregarded, grabbed the back of his collar and yanked him back. “Don’t walk away from me. I’m not finished!”

Gerard turned, swung his arm to remove her hand and said, “I am!”

She watched him leave with the anger showing on her face.

“Yes, you’re all finished,” she whispered to herself.

Upon his return, Rachael caught a familiar scent from her boyfriend. Only Jill seemed to recognize her sudden reaction and was about to ask her if something was wrong, but held off when she caught an uneasiness about Gerard. Using a kiss as an excuse to lean over towards her boyfriend, Rachael confirmed the smell, but the taste on his lips also revealed more than just barbecue sauce.

She quickly pulled back, stood up and left, with Gerard in pursuit.

“Horny little buggers, aren’t they?” asked Tom.

“Yes, but that’s not why she left.”

“Huh? Did I miss something?”

Confused how the exchange of information could have been so complete without a word spoken or the use of her natural eyes, Jill couldn’t help but become more curious over the nature of Rachael’s pain.

“I think we both missed something.”

Evan walked up holding Heather’s hand. “Hey guys, mind if we join you?”

“Hey Heather! How are you? Or should I call you Captain Heather?” Jill jumped up to give her a hug.

“Actually, it’s Captain Heather McKinley,” she said showing Jill the large, irregularly shaped diamond ring.

“Oh my God! Congratulations!” Jill said, giving her another hug.

“Thanks, but please, just call me Heather. Otherwise, I’d have to start calling you Captain Jill.”

“Let’s not start that, because I seem to be the only one here who isn’t a captain,” joked Tom.

“You know, I’m really mad. How come you guys didn’t wait for us?” asked Jill.

“Of course we waited, silly. We’re just engaged. You think I would walk down the ...tube without you guys there?”

“So when’s the big day?” Jill asked.



Evan found a seat and switched the topic. "We're going to have to worry about that after we figure out how to make this mission safer. We have more tugs coming in, so we need a solution and we need it fast."

Tom spoke first. "It's a shame we don't have Space-Lift's cord anymore. We could wrap Vesta and use it to slingshot rocks around even faster than with a gravity assist."

"You know, we do have a lot of left over ribbon from the tugs that we couldn't piece back together," offered Heather.

"How much?" asked Jill.

"Well, we were only able to salvage about ten of the hundred tugs, so we should have close to ninety rolls of the stuff," said Evan, looking over to Heather for confirmation.

"Holy cow, that's almost a thousand kilometers of the stuff," said Tom.

"That should be enough to wrap around Vesta, right?" asked Heather.

"Well, no. We would need about fifteen-hundred or so," said Evan.

"We could have Earth send us more," suggested Jill.

"Sure, but that would take at least a couple months," said Evan.

Jill thought about it. "Maybe they don't have to. All we need is a couple good anchor points at the poles. We could have one orbiting vessel connected to both anchors. When a tug comes in with its rock, they can hook to the orbiting vessel and get pulled around."

"Do we have enough ribbon for that?" asked Tom.

"Sure, we'd only have to go half way around with enough slack to keep them from brushing off the surface," said Evan.

"And the anchor points?" asked Jill.

"Some of the rolls are still attached to center sections of broken tugs. If we cement these in and avoid pulling up on them, they should hold," said Evan.

"Nice! That would also allow the orbiting tug to rotate around endlessly," said Jill.

"I'd hate to be the sucker stuck in orbit. Who are you going to designate for that job?" asked Tom.

"That would be my tug," said Evan. "We only need one to maintain command, either at the surface or in orbit. Besides, I've been looking forward to getting off this rock."

"Dude, you'll be tied to the rock. Not sure I see the difference."

"The difference is that I would have to catch each new tug coming in and whip them around. I don't know about you, but sitting on my ass and letting everyone else do all the work is no fun."

"I think I see your point," agreed Tom.

## 47. NEW HORIZONS

Heather's morning smile faded with the realization that her three day pass was now on its third day. She pushed back the feeling and rolled to the side with her head on Evan's shoulder. His semi-sleeping form received the weight as if it were a gift.

After a pleasant snooze, Heather accepted her fate and started to push herself up. An arm snaked around her waist and drew her back down to him. Even more pleasantly, she succumbed to his needs and followed his unspoken commands.

Outside the station tube, there was dark. On Vesta, the phases of light cycled several times throughout the day that most didn't bother trying to keep track. Heather put her hands against the glass to view the stars and the faint glow coming from neighboring tubes. She didn't notice the shadow of another walking past a window who was converging on her path.

Heather proceeded ahead and opened the airlock, keeping to her left for the door to C14 without seeing the woman standing behind and to her right.

“Hello Heather,” Madia said, enjoying the startled panic that caused Heather to suddenly jump and hit her head.

“What the heck!?” Heather protested, rubbing her head.

“What? I only said hello,” Madia said, slowly walking towards her.

“Well, it’s not nice to scare people,” Heather replied, backing up against the door.

“Maybe I like scaring people.”

Heather nervously watched Madia approach with one hand oddly held behind her back. Feeling for the access panel behind her own back, Heather began to realize her uneasiness around this woman was warranted. Looking to buy time, she spoke, “You know, that bad girl attitude is kind of sexy.”

Madia paused and gave her a smile. “Maybe that’s why Rachael liked me so much.”

Madia slid the knife back into the hidden slot and slowly brought her now empty hand around to Heather’s face. As her body and face approached Heather’s, the door came open.

“Whoops, gotta go. Maybe we can do this another time?”

Madia snapped out of her lusty moment and quickly replaced the emotions with rage. As Heather backed away, Madia reacquired the knife and this time brought it in full view for her prey to see.

"No, you're not going anywhere!" she demanded.

With eyes wide, Heather turned and hastily pulled herself through the tube towards gate C14.

Madia grabbed the door, pulled herself through and used the jamb as foot holds for a jump. The maneuver brought her in range, but without the leverage needed for a strike. With her left hand, she reached out and got a hold of Heather's necklace. The strong chain pulled back with the top star of the pendant poking into her throat. Heather let out a short cry from the pain and found herself stricken with fear from the sight of the knife now held at her neck.

"Do as I say and I promise not to cut your throat. Agreed?"

Heather nervously nodded her head.

"Good. You see, I need to borrow your ship."

"What are you going to do?"

"Let's just say I have a little errand to run."

"You're not going to hurt anyone, are you?"

"Not another word or you can be sure that I will hurt you."

Linda awoke to Heather's message and started her predeparture routine: coffee, shower, makeup and of course a quick systems check. Confused that Heather was still not home, she clicked her com and said, "Hey, where are you girl? We're all ready to go."

Without a reply, her concern started to grow. Suddenly, the sound came over of the port bay doors. Linda let out a sigh and jumped into the copilot seat to prepare for launch.

Linda heard the descent of someone down the tube, but didn't bother a look to confirm if it was Heather. "It's about time girl. I was beginning to think that you were giving up your command to live with Evan."

Still without a reply, Linda turned her head around to see another approaching. "Hey Madia, you looking for Rachael?"

"Actually I came in with Heather. She said I could ride with you guys for a mission."

"Oh, okay. Is she coming down?" Linda asked.

"She went down the other tube. Said she wanted to wash up. That you could lift off once you're ready."

"Really? While she's washing up? Wouldn't it be a little hard for her to shower without artificial gravity?" Linda asked, spinning her chair around to give Madia a puzzled look.

Madia used the conversation to cover the distance. Now standing in front of her, Madia looked past Linda at the unlocked terminal.

"That's convenient."

"What is?" asked Linda.

"With the console unlocked, I guess I don't need either of you," Madia said with a devious smile.

After a very brief delay, Linda jumped to get up, but was held back by the chair restraint she had recently engaged. Madia didn't flinch and simply smiled at her confinement. Linda looked over at the console and attempted to spin around to engage the lock. Madia kicked her hand up and forced the chair to continue rotating until it was once again facing away from the console. Before

the maneuver was complete, Madia had her hands around Linda's neck and started to squeeze.

In a fit of panic, Linda fought unsuccessfully against the grasp. Between the fear and pain, she released her arms from the struggle, reached down to disengage the restraint and pulled herself down and out of the chair. The hard top to the tall back rest caught Madia's wrists with the leverage working to release them from their grasp.

Blinded by fear and struggling for air, Linda's escape was short lived. Madia circled the chair rubbing her wrists. "You'll pay for that!"

"Why are you doing this?" Linda managed to get out.

Madia's pride produced the desire within her to brag about her plan. "You really want to know?"

Linda nodded while backing away in a slow, breath-taking retreat.

"Once you and your crew are dead, I will run the engines to produce enough hydrogen to fill the entire vessel. When I am clear, this ship will explode along with the station without anyone knowing the reason why."

"What!? You can't be serious!"

"Yes, very serious. Your teams will struggle to find the nature of the explosion before they regroup in panic once they realize the final path of Ceres."

"I don't understand. What path?"

"I flew the last rock around towards Ceres. Once my rock impacts, Ceres will be on a perfect course to collide with Earth."

"No! You'll kill everyone. Our entire race!"



“God will cleanse the world and appear before those who follow His true message.”

“True message? That we should kill each other and destroy our world. Please listen to yourself. How can this possibly be the will of God?”

“God has spoken to my father, Kulari Vulkutta, and has given him this path. I am merely the messenger of His will.”

“Kulari was your father?”

“No, he IS my father!”

“Was! Kulari is dead!” stood Heather behind Madia with a carbon staff in her hands.

Madia turned to face her. “Sorry to disappoint you, but my father was far from the mosque when the blast occurred.”

“I wasn’t talking about the nuclear bomb he used to shield his escape. I was talking about your family’s secret hide-out in a mountain near the Kurran River. Evan told me that your father and everyone else there were killed by a satellite projectile.”

“You lying bitch!”

“Is that so? Have you heard from him in the last couple months?”

Rage boiled within Madia, but her discipline took hold to work out a strategy. “How did you escape from the supply closet?”

“You seem to be forgetting that this is a four person crew,” Heather said, seeing her pod crew approach from behind Linda, each holding a staff.

Madia glanced back to verify the sound of their foot falls and an instant later she was running towards Heather.

Using her skills from ballet, Heather side stepped the strike, spinning with her staff. The edge of the pole caught Madia's cheek, who paused to place her hand on the wound. Looking back, the three armed women stood ready with Linda safely behind, typing on the console. Madia glanced over to the screen in front of her to confirm the activation of lock mode. With a curse mumbled under her breath, she jumped up the access tube with Heather in pursuit.

As she climbed, Heather could see the bay doors start to close after Madia's entry. She raced up and extended her stick to block the door. Recognizing the presence of an obstruction, the door cycled back open. By the time the door was fully opened again, Madia was gone. Quickly, she pushed off and slid back down the tube, using her hands to control the descent. When she reached the bottom, Linda already had the console unlocked and was alerting Evan over the com.

Heather broke in, "She's gone. Get everyone you have and block her from getting back to her tug."

Gerard slept through the alert tone, but slowly digested the words being broadcast. "All hands! Apprehend Captain Madia Santosh of Afghanistan-4 at all cost. She is headed for gate B-11. Repeat, block access to gate B-11 and apprehend Captain Madia Santosh at all cost. She is attempting to destroy the station. Beware; she is armed with a knife."

Gerard opened his eyes, half knowing if the announcement was part of some dream. Searching within, he felt the true presence of the words. Suddenly lucid and alert, he jumped from the bed, ignoring the confused complaints of his girlfriend.

With Jill and Tom ahead of him, they climbed up the tube and jumped from the ship without care of arming themselves.

“Which way is B-11?” Gerard asked.

“Follow me!” Tom replied, hitting the access towards C-9.

Rachael stumbled out of bed and made her way to the shower. The water felt good, but seemed surprisingly hot with the tug idled at dock. After a refreshing wash, Rachael turned off the water and enjoyed the warm blast of air over her wet, naked skin. Once dry, she stepped out, put on her robe and hummed a tune as she turned to open the bathroom door. The obstruction slid sideways into the wall, revealing Madia quietly standing on the other side with an unpleasant stare. Oblivious to the intrusion, Rachael put up her hand to feel her way through. Madia slid to the side to avoid being touched, producing a slight current of air that was registered on the tiny hairs along Rachael’s arm.

She hesitated only a moment, appearing to look in Madia’s direction. The sound of the engine hum was stronger than expected and drown out any other sounds she might have heard. “Hmm, that’s odd.”

Rachael shrugged it off, turned away from Madia and resumed her song while feeling for the door to her room.

As she made her way, Madia quietly followed behind. Between her own breaths and the engine noise, Rachael caught a slight sound that she couldn't disregard. A sudden surge of fear was partly quenched by the feel of the door access. Without missing a beat, she triggered its operation, hastily entered and reached around to close the door. The sense of a presence was gone and gave her a moment to collect her thoughts. 'It must have been Gerard trying to spook me. I'll show him.'

She picked up and donned the device, bringing her gray world back to light. Her concerns grew, but as with a cat, curiosity got the better of her. Luckily, another feline quality she shared was tact. Rachael pulled her robe hood over to mask the headset and lifted her hand to telecast her false handicap. The door came open again, with Rachael half surprised to see no one on the other side. She stepped out and headed for the kitchen. Something made her continue the façade, pacing her way with a hand on the wall. It made her think of the time as a kid when she pretended to have amnesia. Her mom wasn't fooled, but they both enjoyed the game just the same.

As she felt her way around the torus towards a kitchen station, she heard another faint sound.

Rachael turned around, switching the arm she maintained on the wall. Aside from the lack of color, the image of Madia's face and form just a few meters away was as clear as day. What was also clear was the large knife she held in her right hand.

"Is someone there?" Rachael quickly asked, controlling the chemical reaction that was building within her.

She waited only a moment for a response, knowing none would be offered. Rachael fought her fear, turned around and made her way as inconspicuously as she could into the kitchen. The drawer came open and she used the opportunity to look back around from the seemingly normal motion of reaching for something within.

The feel of an empty space in place of the knife she sought unleashed a fit of panic that was only amplified by the sight of the fast approaching form with its arm raised in a striking position. The reduced frames that Rachael perceived through her headset gave Madia's arm a ghosting effect as it descended upon her.

Rachael let out a scream and jumped to the side, banging her hand on the drawer as she jerked it free. The motion extended the drawer into the path of Madia's blade. The knife wedged into the composite material and stuck fast.

As Rachael recovered, she saw Madia struggling to free the knife. Her instinct kicked in, sending her hands in a useless attempt to fight for the weapon. Having proper training, Madia swung her arm up to dislodge Rachael's grasp, stepped over and elbowed her in the head. The strike hit Rachael's face with the pain shooting through her eyes as she stumbled back. As her world grew dark once more, Rachael hastily fumbled with the headset in a failed attempt to fix the device. The combination of anger and fear caused Rachael to swing wildly towards the place where Madia had just stood. Madia gave a small chuckle that cost her a deep scratch across the face from Rachael's sharp nails.

“That’s going to cost you, bitch!” Madia growled and advanced towards her.

Rachael resumed her flailing attack, but this time, Madia was prepared for each swing. She sidestepped the first and shot her fist to meet the biceps of Rachael’s right arm in mid-swing. The blow sent a jolt through the arm and removed almost all of its strength. Before she could recoil the next swing, Rachael felt the same sharp pain in her left arm, causing it as well to temporally drop to her side.

Madia took a slow step in to face her wounded prey. She pulled off the now uncovered headset and threw it to the floor. Rachael helplessly listened to the sound of Madia crushing it under her foot.

“Why would you do this? Aren’t we friends?” Rachael asked as she stepped back, feeling her way along the wall.

“You betrayed me!”

“How? What do you mean?”

“You were mine and Gerard was mine. Together, you conspired against me.”

“That’s not true. I do like you Madia, but that night a year back was just an experiment. I love Gerard and he loves me. It doesn’t have anything to do with you. He told me about the night we all met, but you left him.”

“I was just giving him room.”

“And I was just playing hard to get, otherwise the two of you wouldn’t have been together. Besides, you called him a donkey?”

“You are both donkeys!” Madia said, grabbing hold of Rachael neck.

Jill followed the men and reached gate B-11 as a number of others were converging from the adjoining tubes. Within the crowded airlock, she saw a knife lying on the floor to the side of Nick who was standing guard over Madia's co-pilot, Tonya.

"Is she in on it?" Tom asked.

"In on what? What has Madia done?" Tonya demanded.

"I think Evan spelled that out well enough in the transmission. You guys better head up and make sure she isn't in there," said Nick.

"No! That is the property of Afghanistan."

Ignoring the protest, Tom nodded to Gerard, grabbed the knife from the floor and jumped up to the port bay of Afghanistan-4. Gerard followed, but Jill stayed with Nick to question the woman she vaguely knew.

"Did you know Madia was up to something?" Jill asked.

"Up to what!? Can someone tell me what she has done?" said Tonya.

Jill pushed her palms down in a slowing motion. "You're right, we don't know what has happened and until we do we can give her the benefit of doubt. But for arguments sake, let's just say Madia did try to destroy the station. Did you notice anything that might have led you to think she could have been up to something?"

Tonya took a moment to think. "No, though it would be hard to tell. She doesn't talk much aside from telling us what to do."



“Wait, you guys are stuck on a ship together for months at a time and she isn’t friendly with any of you?” Jill asked.

“Well, she is a very demanding captain, so we are careful to follow her instructions. Socially, she keeps to herself. You guys probably know her better than we do,” Tonya admitted.

“She was more Rachael’s friend than mine. That was until ...oh no!”

Jill looked around and saw the tubes crowding up behind her. She pushed her way through one, shouting for them to make room. By the time she made it back to her ship, the port bay was locked and the access panel was smashed.

“Oh no, Rachael!”

Jill turned and made a dash for a neighboring gate. The panel there was intact and waiting for a password to the vessel above. She brushed this screen aside and popped up a list of tugs within range. To her surprise, nothing displayed between Oregon-5 and Maine-6.

“Did they just take off?” she asked herself.

Jill crossed the small room to press her hands and face on the glass.

“No, still there? Then why ...damn, she disabled the communications process.”

Rachael felt the physical pain in her neck as she was trying to empathize with the emotional pain that Madia must have been feeling. Instead of struggling against the grasp, she reached around Madia’s head and gently pulled

it in towards her own. As their lips met, Rachael felt the pressure around her neck subside.

Madia suddenly burst out crying.

"It's going to be okay," Rachael said, trying to placate Madia back across the line between friend and foe.

"How? They killed my father and my family," Madia spoke with her head on Rachael's shoulder.

"Your family? Who killed your family?"

Madia lifted her head and looked towards the patch that covered Rachael's eyes. "You, your friends, your country."

"My country? Why would my country kill your family?"

"Because I am a Vulkutta."

A surprised expression showed on Rachael's face. "Kulari was your father?"

"Yes and his last order was to destroy the station and direct Ceres towards Earth."

"Towards Earth? Why? What could that possibly solve?" argued Rachael.

"I don't know, but I loved my father. He is the only one who understood me."

"I think I understand you. I certainly can understand that you are in a lot of pain. Confused by what is right and wrong. Trying to honor him the best way you can."

Madia looked at Rachael, surprised by the words.

Rachael continued. "If you are the last of your family, the best way you can honor them is by living an honorable life. Nothing can be gained by living his revenge, especially now that he is gone."

"It is too late. I already tried to kill your friends," Madia said, lowering her head.

"But you didn't, right?" Rachael asked, sounding concerned.

"No, they stopped me, but not for long."

Alarmed, Rachael asked, "Not for long? What do you mean?"

"I rigged this vessel to explode," Madia said, lowering her head once more.

"Oh my God! How?"

"The hydrogen and oxygen output has been redirected to one of the feeder tanks. Once it fills, the back flow of hydrogen will ignite."

"Then we have to stop it."

"We can't. I triggered a program to lock out the main computer with a random password. Without the master password, it can't be unlocked."

"Where is Jill?" asked Rachael.

"I saw her leave with the men to help block me from getting to my ship."

"Then we have to go get her."

"All chamber and bay doors have been locked in the main computer, including the outer hatch."

"Meaning we can't even open it from the inside," Rachael thought aloud.

"I'm so sorry Rachael."

"No, I'm sorry Madia. I didn't know you were with Gerard until a few weeks later when we were getting close to Mars. If I had known, I wouldn't have chased him."

“You chased him? I thought it was the other way around,” Madia said, sounding confused.

“He would probably agree with you, but he only came over to hit on me because I gave him the look. Even a shark is just another fish in the sea until he is given the scent of something good.”

“Just another fish in the sea? That gives me an idea,” said Madia.

“What is it?”

“Quick, open all the faucets and block the drains.”

“You’re going to flood the torus? What’s that going to do?”

“No time. Just trust me.” Madia yelled back, as she ran to the nearest bathroom.

“I guess I don’t have any choice,” whispered Rachael.

Jill used the panel to trigger the alert application.

Evan’s face appeared on the display. “Hey Jill, do you guys have her?”

Jill shook her head. “Negative. Madia snuck onto my ship and locked the door. Rachael’s in there with her.”

Evan looked down towards his console. “Stand by, I’ll disable the lock and shut down the reactor.”

“You can’t! She’s already disabled the communications daemon.”

“Then we need to tow them off the surface fast. She’s going to turn your ship into a hydrogen bomb and take out the station.”

“What!? How?” Jill asked, already piecing the method together in her head.

Evan started to explain, but Jill cut him off. "Wait! Rachael's in there."

"I'm sorry Jill. If she's in there, it's likely she is already dead. Either way, that ship is going to explode and there is nothing we can do to stop it."

"Okay, but wait for me. I'm coming over." Jill turned and ran, without waiting for his response.

"You have one minute."

Water spilled over sinks and basins to flow onto the rug and through the gaps in the shifting floor. With all twenty-four faucets open, the crawl space below filled quickly. As the pool of water started to rise, Madia waded through and around towards Rachael.

"I hope this works," Madia said, seemingly unfazed by the water slowly rising around her, but Rachael was clearly spooked.

"I still don't understand. All this is going to do is drown us before we explode."

"The ship probably would have exploded already. We are taking water from the chamber that is being filled with hydrogen."

"Meaning the explosion will have even more hydrogen and oxygen!" Rachael freaked.

"Well yeah, I guess you're right about that."

"So how do we stop it from making more fuel?" Rachael asked.

"I haven't figured that part out yet."

"Great. And what's worse is that I can't swim."

“Really? Well that shouldn’t manner. Just climb the ladder as it rises.”

Just then, the tug’s gravity shifted, as if Vesta suddenly increased to the mass of Earth. Slowed by the water, the floor panels jammed and failed to compensate, causing Madia and Rachael to fall hard to the side with the water splashing over them.

Rachael grabbed hold of the ladder, pulling herself up and out of the water.

“You okay? What happened?”

Without a response, Rachael shouted out, “Madia? Where are you girl?”

She heard nothing but the sound of water flowing from the floor and faucets as it made its way around the curved tube. She made an attempt to feel for her friend while maintaining a grasp of the ladder. Her arm’s length revealed nothing but the water below and its unnatural current caused by the slowing of the tug’s rotation.

“Madia!?” Rachael screamed, but still without a response.

Letting go, she was quickly caught up by the flowing water. In a state of panic, she held her breath and stretched her arms to examine a world she spent her life trying to avoid. Ever since that little girl slipped down the side of her tub without being able to reach for something to pull herself up, the only water she allowed around her was in the form of drops from rain or shower.

To Rachael, being dragged within the shallow stream felt like she was engulfed in a fast, endless river. She struggled for breaths and to control her own fear, while

scanning the areas she could reach: A couple chairs, a console and a door to her bedroom, as it flooded with water. None of these things she recognized, including a tangled shoe that her hand brushed across as she floated by.

Madia's outstretched arm clawed for something and found its mark in the back Rachael's hair and the strap to her eye patch. The painful scream caused Rachael to lose the precious air she had held in her lungs. Reaching around to remove the hand, Rachael felt the fingers quickly loosen and latched themselves around her wrist. Instinct took hold, causing Rachael to fight to break free from the death grip, but it was too strong. Suddenly, the fingers went limp and Rachael's wrist was free. On the brink of drawing water into her lungs, Rachael grabbed Madia's thumb and pulled herself against the current. Lifting her head, the water worked to bring her mouth above, allowing the sweet taste of oxygen to her lungs and blood. She used the renewed strength to climb Madia's limp form until she reached the sections of floor that her foot was caught between. Rachael yanked on the foot, but it failed to move. She pushed down on the floor that was held fast by the towed motion of the vessel, and it also failed to give. The realization of her friend's fate combine her tears with the water that was streaming across Rachael's face.

Rachael cried, helpless to free her friend's foot and unable to stand in the water that was now too deep. The level forced her up the ladder as her friend had suggested. Without sight or solution, all that was left in Rachael's world was the sound of the rising water and the persistent



whine of the reactor. The loud bang that followed squelched her struggle and released her spirit to fate.

“Okay Evan, we’re hooked up and I’m clear,” Jill radioed.

Evan immediately set the engines to full and yanked up on the rotating tug. The dock released the ship and it started skyward. Once clear, Evan drew her in a circular course, attempting to use Vesta’s surface as a barrier between the station and this large improvised device.

Jill looked up from under the vessel to see the locked port bay. Without being able to let go of her friend and vessel, she donned a mask and triggered the engines to full. The acceleration of the pod drew blood from her brain, but the smart suit compensated to help her fight the pain and light headedness. The fast, hydrogen engines traversed the distance quickly and she backed off to avoid hitting too hard. The impact breached the door as well as the front section of her pod. The small ship bounced within the other and started its motion back towards the hole from which it entered. As it slid back, Jill’s damaged shuttle brushed across a docked pod, causing the legs to cross and tangle. Jill’s pod flipped and crashed once again into the broken gate that was still partly connected to the opening. The door teetered on a broken hinge, threatening to release it and Jill’s broken pod back out to space.

Evan failed to notice Jill’s attempt and continued his curved path to sling the vessel around Vesta. He completed the circle and released the cord without reducing

the engines. He hoped the maneuver would provide him the ample time and distance before it exploded.

A beautiful silence engulfed the world that Rachael now found herself floating within. It took her a moment to realize it was the same world she thought she had left. Previously overwhelmed with the pressure of sound and gravity, the ship was now mostly quiet and falling weightlessly through space. The slow rotation of the tug kept the water below, but the sounds of faucets and current had subsided. Even the engines had silenced, with Rachael nervously using the sound's absence as a mechanism for hope.

The sudden rotation of the airlock she had climbed to sent a jolt of fear once again through her being. The feeling subsided, replaced with a sense of limbo as she listened helplessly to the doorway completing its orbit.

"Rachael!" Jill burst out, grabbing hold of her friend with all her might.

"Jill!"

"I knew you were alive. Somehow I just knew."

"It's good to see you too," Rachael cried as she laughed.

"My God, what happened to your eyes? They're bleeding," Jill said, after pulling back from the hug.

"It doesn't matter. I'm just happy to be alive."

"Where's Madia?" asked Jill.

"She's down there, trapped under the water. I couldn't rescue her."

"Rescue her? Wasn't she trying to kill you?"

“At first, yes. Kind of a long story. Maybe we should fix the ship first.”

Jill looked down at the dimly lit tube to the flood below. “What the heck did you guys do to my ship?”

“Kept it from exploding. Speaking of which, we’re still sitting on a bomb.”

## 48. VESTA WEDDING

Evan stood ready at the makeshift altar and watched the delicate form approach, brilliantly laced in white garment. With her face shrouded by the thinnest layer of cloth, he could barely make out the soft lines of her face and the dressing that covered her eyes.

Peter halted their approach, turned to the woman he walked with and pulled her veil up over her head before lightly kissing her on the cheek. He turned to Gerard, shook his hand and stepped back to join the small crowd of spectators.

Evan's steady hand lifted the paper script that he proudly spoke from. "It is the honor of ship captains to serve their crew in guiding them as one to serve their ship. But I cannot think of a greater honor to be given than to have the privilege to join two as one in their voyage through life.

We are joined here together as one on the twenty-second day of August, the year of our lord two-thousand fifty, to bear witness to love's union between Gerard Russell Sebastian and Rachael Rebecca Hart. With the creation

of this union, let none divide, distract or dissect. For if any have the faintest reason that Gerard and Rachael should not be bound for life, let them speak now or forever hold their peace.”

After a couple uneasy seconds, Evan continued. “Will the Best Man please present the rings?”

Tom, who was standing next to Gerard, came forward and placed down a tray containing what seemed like a single golden ring. Evan picked up the small but meaningful token, twisted the two halves apart, displaying the decorative pattern that had linked them as one, together.

Handing the larger half to Rachael, Evan resumed. “Rachael, you may recite your vows to Gerard.”

She turned to him and began. “With this ring, I pledge my life and my love to you. I am forever faithful to your heart and trusting to your word. In giving myself, I promise to fulfill your needs. For all I do for you, I do for us. We are together now and for all time.”

With the completion of the words, Rachael slid the ring onto Gerard’s finger.

Evan picked up the other half and handed it to Gerard.

Gerard turned back to Rachael and spoke his vows. “With this ring, I pledge my life and my love to you. I am forever faithful to your heart and accepting of your words. For you, I will be the best man I know to be, because it is you who gives me the strength to be that man. You are my life now and for all time.”

Evan watched Gerard place the ring on Rachael’s finger before continuing. “These vows are engraved on the rings that together, represent love’s commitment in mar-

riage. By the authority given to me by marine law of sea and space, I pronounce Gerard and Rachael, husband and wife. You may kiss the bride.”

Cheers and claps emanated from the small crowd as Gerard and Rachael consummated the marriage with the most passionate of all actions: a simple kiss.

As the newly married couple walked through, rice that Tom had pulled out of storage, rained down upon them. The same rice that months later, was still being found within the cracks of the shifting floor sections.

On the other side of the tube, a small banquet hall was set up with tables on either side of a small dance floor. A holographic maitre d’ program guided the songs and festivities that included dancing, drinking, and laughing.

Tom used a fork to clank his glass. Jill and others quickly followed suit. Gerard put his hand around Rachael head and guided in her lips to his own. When they parted, Rachael spoke. “So, are you sorry you married a blind woman?”

“If you were blind, def and dumb, I would still love you.”

“So now you don’t want me to be able to speak either?”

“Actually, I would love if you sang. You have a wonderful voice.”

With that, they kissed again.

Tom walked up and joked, “So where are you guys going for your honeymoon?”

“You know, we could probably sneak away for a little. With our orbital slingshot up and running, we’re way ahead of schedule.” offered Jill.

“What, are you trying to invite us along?” laughed Tom.

“Well, it’s going to be hard for them to go anywhere without my ship.”

“She’s right,” said Rachael. “We should take another excursion, together.”

“I think Mars and Eros is a little too far now,” said Tom.

“Forget Eros. There’s gotta be something better to see than that,” said Gerard.

“I hear Venus is beautiful this time of year,” smiled Jill.



## 49. TIMES SQUARE

The crowd gathered to view the massive spectacle. Three months prior, they had added extra optical projectors to display the brightest and finest detail of old Mars as the first holographic New Years ball. Now the last live images of this plain red planet slowly increased in size with Ceres approaching up Broadway.

Ticker tape fell over the parade, causing tiny, pixelized distortions of the image, but none seemed to mind or notice. James, Mora, Evan, Heather and a hundred tug captains led the procession. His wife waved to the crowd and glanced at a Starbucks as they crossed over 6th Avenue. She looked over at James and asked, "Mind if I sneak out for a coffee?"

James looked at her and over at the impenetrable wall of people that lined the curb. "Are you serious?"

Mora looked over at the crowd that blocked her way and back to James. "Kind of. I really want a coffee."

It was a cold March day and Mora gave her shoulders a shiver. James looked up at the sign and said, "I'll be right back."

He jumped from the front of the parade and over to the curb, where a cop was reinforcing the line. The officer looked at him and asked, "Sir?"

James spoke quickly, "You think you can help me get through to grab a cup of coffee for my wife?"

The officer spoke, shaking his head. "You know you're nuts, right?" He turned towards the crowd and raised his voice. "MAKE ROOM FOR MISTER KENNEDY PEOPLE!"

The first few people in front saw James approach and quickly gave him a path. The cop pushed through the rest of the people, lightly using his whistle to clear the way.

Within, the store was standing room only with no organized semblance of a queue. The cop continued his whistle plow towards the front of the pack. A lieutenant at the counter turned around, hearing the commotion. He shook his head and threw his finger several times at the approaching officer. "That whistle is for official use, not for your personal coffee and donut run, Jack Ass!"

The cop didn't say anything in defense. He just turned and looked towards James to allow him through. The lieutenant got one look at the man, turned back to the counter and shouted to the staff. "GET THIS MAN A COFFEE!"

The busy staff paid no attention to the normal outburst of clients addicted to their product. A barista, who was attending New York Tech for math and science, finished her task ten seconds later and casually made it over to the counter. She spoke, cleaning off her hands and getting a quick orientation of the counter. "Welcome to Starbucks. What can I get you?"

As she made eye contact, James was already starting his order. "Yeah, can I get a Venti Cafe Mocha, please."

The woman's mouth dropped open. She hesitated for a moment or two before asking, "Ah, would you like whip cream with that?"

James smiled and said, "Sure."

She jumped to the order, set the machine and ducked under the counter to grab something from her bag. She popped back up with the small cube, and asked, "Could I get your autograph?"

"Of course."

After a smile, she waved the scanner towards him, flipped the cube to project his steady image even as her hand shook nervously. James extended his finger toward the counter and inscribed into the digital image, "Thanks for the coffee. James Kennedy"

She popped back around, pulled out the fully insulated cup, whipped up the top and clipped on a spill proof lid. "No charge, sir."

James thought to argue, but realized this was a time to be gracious. "Thanks!" he said, turning to see the officer already clearing a path back towards the parade.

James came back into the clear under Ceres and stopped to look up at the sacrificial world. He shook the officer's hand with another "Thanks" before heading up Broadway to catch up with his wife.

"Did you miss me?"

"You know I did!" she said, putting out her hands to collect her prize. She took a sip and offered her gratitude. "Oh my God, that is so good! Thank you so much!"

James gave a huge grin. "Well, I already gave you a world. I figured, how hard could a coffee be?"

Mora looked back around. "I don't know how you made it through, but thank you."

"So, you never have to question that I love you, right?"

She looked at him and responded as gently as possible. "Of course I will. I'm a girl!"

James nodded. "Yes. Yes you are!"

Jill and Tom were also enjoying a couple hot drinks, provided free at the bar in the back of the mayor's platform. A three-year-old girl with a pretty dress and warm sweater sat on Jill's lap. "Mommy, Daddy! It's da moon," she said, pointing.

They both turned around to see Ceres over Broadway with the precession in front. "That's not the moon, Holly. That's Ceres. It's where mommy and daddy met."

The little girl squinted her eyes. "It looks like da moon."

Tom leaned over and kiss his daughter on the forehead. "You're right; it does look like the moon, doesn't it? But it's not. The moon is a dry, dusty ball of rock. Ceres is better, because it has an ocean of water under its dry surface."

Holly considered the words and stared at the approaching mass.

Gerard stood with his son on his shoulders and gave Tom a light punch in the arm. "Hey man, this is the freak-ing show of the century and you guys are just going to sit through it?"

Tom put down his cup, let out a groan as he stood up and turned to pick up Holly. He made a seat for her with one arm and picked his cup back up with the other. They all stood at the platform barrier to watch Ceres pass right in front. Holly reached out her body and hand over the barrier in an attempt to touch the projection. Jill gave a panicked look, but Tom reassured her with, "I have her," after a simple reach and redistribution of weight to compensate. Jill relaxed and grabbed the coffee he held in the arm that was being used to keep their daughter from falling.

The people below counted down from sixty. To fifty, to forty, to thirty. Ceres hastened its approach, as if the gravity of the holograms themselves were causing the acceleration. Twenty. Rusty, magnetic dust clouds on the surface started to turn up, marking a target for the approaching mass. Ten, nine, eight. The numbers grew louder, shouted out in one time zone across the planet. Five, four, three. The sound of the numbers made Holly cover her ears. Two, one. There was no zero. As the last number was still in echo, Mars' atmosphere lit up against the invader. Every man, woman and child stood quietly to view what they previously could only imagine. A fiery cone that shot up and extended deep into Mars' core. The planet wobbled on its axis and the smoky debris circled around until it met back up at the other side.

No more the plain red ball with a thin layer of vapor. Instead, the thick, hot cloud blocked any view of the planet's surface. The colors swirled in the atmosphere and fire started to rain down as some of the rocks, that were spewed from the surface, made their return.

The minutes passed without a word being said. The collection of rocks that made their way to orbit showed the beginnings of a ring. The sun's reflection brought out the organization in better detail, making one side brighter than the other.

“Hey Mommy! It looks like your ring. Can you see it? Can you see it?”

“Yes, I do Cody. I see it. It's so beautiful!” said Rachael, seeing the spectacle through her regrown and equally beautiful eyes.

## ABOUT THE AUTHOR

Never saw myself as a writer until I came up with yet another invention. This invention was far larger in scale than any other idea I had before. And since I had been unable to follow through on even the simplest of these ideas, I knew my attempt to terraform Mars could only ever exist in a dream. But what is a novel? It is nothing more than the unlimited potential of imagination as with a dream. If you have a dream, put it on paper.

Born into a large and supportive family of brothers, sisters and cousins as those before us who cared for and directed our paths. Family gave me everything in my life, including an education in math and physics at RIT, and I strive each day to return the favor to those around me.

Lived most of my life on the north shore of Long Island. My profession is in financial and linguistic software. I volunteer at my local fire company and I am the parent to three amazing kids. My strength and focus comes from the love of my lady.



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**AFTER DECADES OF WAR,** one man strives to unite the world through the task of creating another. The global project to terraform Mars invites hidden danger on the founder, James Kennedy, and the project workers operating asteroid tug vessels in space. This realistic view of the future could represent the birth of a new living world or the destruction of the Earth herself.

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Russell's story is more than an action-thriller romance set in space. He presents a hopeful, not-too-distant future where humanity can unify around "a common effort greater than the pyramids, higher than the Moon, truer than religion" and, in doing so, build a bridge between cultural and geopolitical differences...

Adrenaline-pumping fight scenes and rogue asteroids provide action-packed sequences.

Terra Forma, Russell's debut novel, is a refreshing crossover entry in the science-fiction genre that will surely appeal to fans of political thrillers, military action, and general fiction.

- C. William Gee, *Clarion Review*

